

Professional and Practice-based Learning 20

Michael Goller
Susanna Paloniemi *Editors*

Agency at Work

An Agentic Perspective on Professional
Learning and Development

 Springer

Professional and Practice-based Learning

Volume 20

Series editors

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Professional and practice-based learning brings together international research on the individual development of professionals and the organisation of professional life and educational experiences. It complements the Springer journal *Vocations and Learning: Studies in vocational and professional education*.

Professional learning, and the practice-based processes that often support it, are the subject of increased interest and attention in the fields of educational, psychological, sociological, and business management research, and also by governments, employer organisations and unions. This professional learning goes beyond, what is often termed professional education, as it includes learning processes and experiences outside of educational institutions in both the initial and ongoing learning for the professional practice. Changes in these workplaces requirements usually manifest themselves in the everyday work tasks, professional development provisions in educational institution decrease in their salience, and learning and development during professional activities increase in their salience.

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- understanding and making explicit the complex and massive knowledge that is required for professional practice and identifying ways in which this knowledge can best be initially learnt and developed further throughout professional life.
- analytical explications of those processes that support learning at an individual and an organisational level.
- understanding how learning experiences and educational processes might best be aligned or integrated to support professional learning.

The series integrates research from different disciplines: education, sociology, psychology, amongst others. The series is comprehensive in scope as it not only focusses on professional learning of teachers and those in schools, colleges and universities, but all professional development within organisations.

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Agency at Work

An Agentic Perspective on Professional
Learning and Development

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Series Editors' Foreword

A key claim underpinning this edited volume – *Agency at Work: An Agentic Perspective on Professional Learning and Development* – is that personal agency is central to professional development and learning. That premise seems well-founded and for that reason this volume is a welcome addition to the Professional and Practice Based Learning book series. Indeed, a concern motivating this volume is to identify and define what the concept of agency means for initial and ongoing learning in and for the professions, amidst a range of different perspectives of and orientations to the use of this term. Commencing with the view that agency is about individuals' capacities to act, this concept is qualified and elaborated with reference to a range of perspectives. Moreover, what agency at work means in terms of learning for and through professional practice is elaborated across the range of contributions here, which refer to instances and studies of agency and action through work activities. These contributions are helpful because, as the two editors claim, the concept of agency, whilst popular, remains abstracted and its use has lacked precision and rigour. Indeed, the editors claim that few authors have defined what they mean by agency, yet engage with it and use it to advance their ideas, regardless. All of this has led to a lack of consensus as to what constitutes this term and its implications for learning for, in and through professional practice. The editors note that how authors have used the concept of agency in their work that it can variously refer to a highly individualised attribute, one located in the social world or as being premised on the relations between the individual and their engagement with the social world. All of this has directed the editors' interest to engage with and encourage contributors to be clear about their conceptions of agency and provide grounded instances of both its genesis and its role within learning and professional practice.

The range and diversity of contributions from well-respected authors in the field is quite noteworthy and provides perspectives from a range of disciplines and with cases from a range of domains of professional practice. In keeping with the project of the book, the first of its three sections are directed towards discussions about what constitutes agency at work from diverse theoretical perspectives. Then, a set of chapters reporting empirical studies of agency at work are presented. This is concluded by the editors' summary chapter. In this way there is a concerted effort

across this volume to address both the concern about a lack of clear and substantive conceptions of agency at work and providing empirically informed accounts of its consequences in practice. In doing so, the contributions address both of the concerns set out by the editors of this volume.

In these ways, the chapters in this edited volume make important contributions to this book series, but more importantly to the field of learning for, through and in professional practice. Doubtless, the contributions here will be widely engaged with and discussed, but also, hopefully, will have impacts in considerations and enactment of arrangements supporting professional learning and how individuals are best able to exercise engagement with and enhance their professional practice.

Griffith, Brisbane, Australia
Regensburg, Germany
Paderborn, Germany
May 2017

Stephen Billett
Hans Gruber
Christian Harteis

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Chapter 1

Agency at Work, Learning and Professional Development: An Introduction

Michael Goller and Susanna Paloniemi

1.1 Agency as a Central Concept Within the Literature on Professional Learning and Development

In its broadest terms, the concept of agency is about individuals' capacity to act (Schlosser 2015; Shanhan and Hood 2000). The concept is strongly related to the assumption that human beings are agents of power and change. They are not fully subjugated by surrounding structural forces; rather, they are able to make choices and to act on these choices. On a more specific level, agency describes the phenomenon that individuals—including both single individuals and groups of individuals—are capable of making choices and acting on these choices in order to exert control over their lives and the environments they are living in (Crockett 2002; Emirbayer and Mische 1998; Eteläpelto et al. 2013; Harteis and Goller 2014; Martin 2004). It follows that agency is usually associated with individuals who, in a given situation, make decisions, take *initiatives*, act *proactively* rather than reactively, *deliberately strive* and *function creatively* and *innovatively* (Eteläpelto et al. 2013; Goller 2017).

Such notions of agency have become increasingly popular within discourses on professional learning and development over the last 10–20 years. Thus, scholars with an interest in the topic of learning at, through and for work (in other words, workplace learning) have increasingly addressed agency as an explicit construct (e.g. Billett 2001, 2011; Edwards 2005; Eteläpelto et al. 2013; Smith 2006). Others have adopted a more implicit notion of agency, utilising also other concepts in

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researching the phenomenon (e.g. Raemdonck et al. 2014; Messmann and Mulder 2012; Weber et al. 2014). In addition to these publications, lively discussions on agency, including its relationship to learning and development, have taken place in a range of symposia, organised within major conferences on professional learning (e.g. Goller and Eteläpelto 2014; Goller 2015; Harteis 2010; Imants and van der Wal 2017; Weber and Eteläpelto 2017). It is therefore not surprising that the agency has been described as a key concept, used by large numbers of scholars with an interest in the learning of individuals and collectives in work-related contexts (e.g. Tynjälä 2013).

Unfortunately, discussions on agency as a theoretical concept have remained relatively abstract, and at times, lacking in rigour. Relatively few authors have defined their understanding of agency explicitly, and there has been no consistent focus in the range of philosophical and sociological ideas referred to (see Ecclestone 2007; Eteläpelto et al. 2013; Goller 2017). In addition, the concept has been used with a wide variety of ontological meanings (see Damşa et al. 2017, this volume; Eteläpelto 2017, this volume; Goller and Harteis 2017, this volume; Paloniemi and Goller 2017, this volume). For instance, some scholars understand agency as an individual characteristic that enables individuals to make choices and initiate actions that allow them to take control over their lives and environments (e.g. Harteis and Goller 2014). Others, by contrast, specifically deny that agency is something possessed by individuals, insisting rather on agency as something that individuals or collectives actually *do* (e.g. Lipponen and Kumpulainen 2011; Vähäsantanen 2013). Yet another group does not conceptualise agency as falling within either of these categories (e.g. Billett 2011), highlighting rather the interrelational nature of agency—that is, its manner of connecting individuals to their contexts. So far, such ontological differences have, on the whole, not been explicitly discussed in the literature; nevertheless, clear definitions and ontological clarity are needed if one is to avoid confusion in referring to agency. Indeed, in the absence of such clarity, the term “agency” is likely to become meaningless, becoming no more than a vague placeholder for an unspecific mix of notions.

Furthermore, it can be claimed that the literature discussing notions of agency in relation to professional learning and development has been inadequately integrated. Apart from agency itself, a range of different concepts have been proposed by scholars who have sought to address, theoretically or empirically, the phenomenon in question, namely, that individuals make intentional choices directly related to their working lives and act on these choices. For instance, authors have made mention of proactivity (e.g. Bryson et al. 2006), active participation (e.g. Goller and Billett 2014), self-directedness (e.g. Raemdonck et al. 2014), life-course empowerment (e.g. Wray 2004), innovative work behaviour (e.g. Messmann and Mulder 2012), intrapreneurship (e.g. Weber et al. 2014), and entrepreneurship (e.g. Kyndt and Baert 2015). Only seldom have these authors acknowledged each other. It seems that scholars from different theoretical backgrounds are unaware of persons who may be writing about very similar phenomena but who use slightly different concepts. The weak integration of this literature poses a risk of unrecognised duplication and

a loss of potential synergy. On the other hand, one could say that such a situation actually reflects the multifaceted nature of agency in professional contexts and the various viewpoints available in researching it.

The idea of this book originated against just such a background, involving a range of discourses on agency within the scientific community concerned with learning at, through and for work. Its aim is to collect, integrate and discuss the range of perspectives on agency at work, plus the empirical research that has been generated by these perspectives, and to bring all this together within a single volume. This book thus includes the writings of 41 authors from 11 different countries and five continents. Their contributions provide, in total, 21 chapters. The chapters deal with the relationship between (a) agency at work and (b) professional learning and development. They encompass a wide variety of working life domains and/or contexts (e.g. hospitals, schools, IT organisations, universities, construction teams, freelance work) and are based on a broad range of epistemological and theoretical standpoints (e.g. cognitive psychology, cultural-historical activity theory, life-course research, socio-cognitive theory, sociocultural theory, organisational behaviour). It is hoped that the book will help in developing a broad understanding of the topic of agency at work, and its relationship with professional learning and development. It can be anticipated that such a comprehensive endeavour will not only bring together the current literature on agency within workplace learning, but also foster theoretical and empirical research in the future. Almost certainly, the book will help in taking the current discourse on workplace agency a few steps further, within the community of scholars interested in workplace learning.

Although the book strongly focuses on research originating in the field of workplace learning, its contents may be of interest to researchers from other scientific communities. Discourses on agency can be found in a range of disciplines; these include socio-cognitive and development psychology, organisational behaviour (especially research on proactivity), economics, life-course research and philosophy; they also occur within post-structural discussions (for an overview of some of these discourses, see, e.g. Eteläpelto et al. 2013; Goller 2017). Such discourses are heavily utilised by the authors of this book. However, as indicated above, scholars from a given research strand have tended not to utilise the research of colleagues from other disciplines (see also Goller 2017). It is hoped that by bringing so many research strands together, this book will provide food for thought for all scholars interested in notions of agency in general.

The book is divided into three parts (see Fig. 1.1). The first part contains eight chapters. These discuss agency at work from relatively theoretical perspectives. The second part of the book consists of 11 chapters, looking at empirical investigations of agency, plus its relationship with professional learning and development. In addition, each of these parts is concluded by a chapter summarising and discussing the issues raised in the relevant preceding chapters. The third part of the book includes an overall summary written by the editors of this volume. Below, we present a figure outlining the structure of the book, followed by a chapter-by-chapter overview.

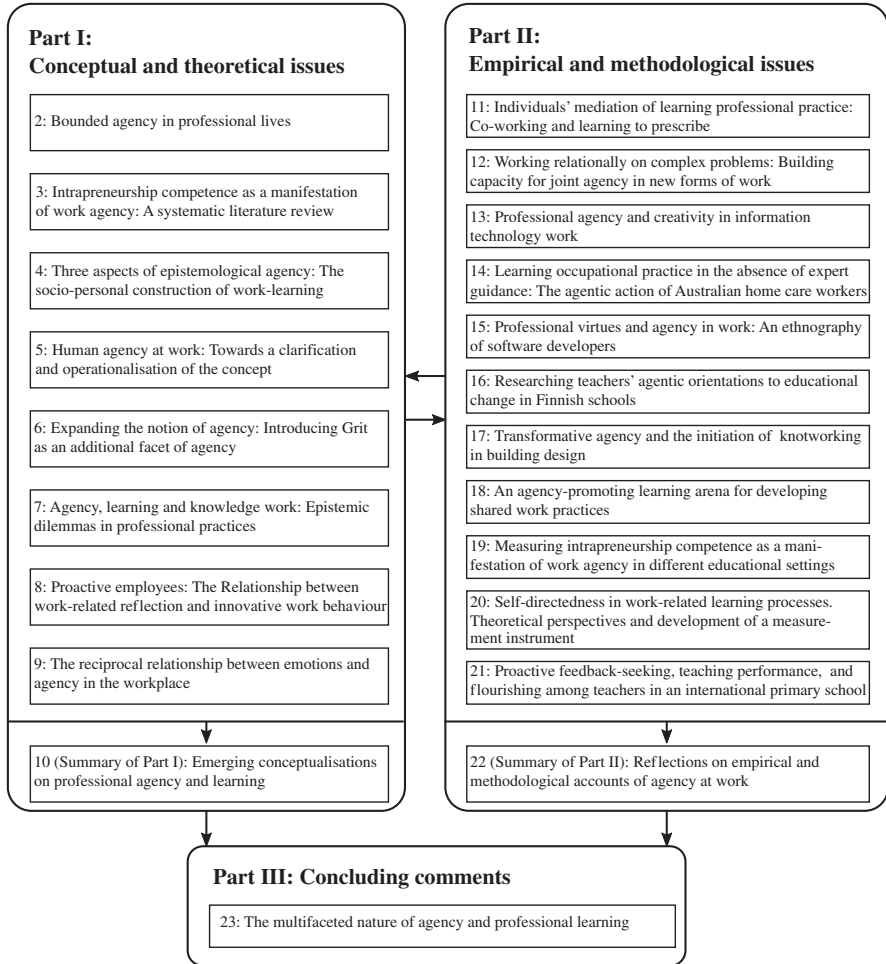


Fig. 1.1 The structure of the book

1.2 The Content of Part I: Conceptual and Theoretical Issues

In Chap. 2 of Part I, Karen Evans discusses agency from a broad interdisciplinary perspective. She covers concepts originating from sociology, psychology, economics and anthropology. Agency is conceptualised as individuals' decisions and actions, aimed at giving direction to their lives. These decisions and actions are not merely embedded in the situational circumstances of a given context; in fact, they are always mediated through them. Evans therefore presents the notion of *bounded agency*. This bounded agency is further conceptualised by referring to three constitutive dimensions: (a) the level of structuration, (b) an internal to external control

continuum, and (c) the scope for transformation, as opposed to reproduction. These dimensions are explored through two contrasting examples from different occupational contexts. The examples are further used to show how bounded agency can be used to explain professional learning and development.

Chapter 3, by Michaela Wiethe-Körprich, Susanne Weber, Sandra Bley and Christine Kreuzer, introduces the concept of *intrapreneurship* as a manifestation of agency in work contexts. Intrapreneurship subsumes all the behaviours through which employees act like entrepreneurs within their employing organisations. For instance, employees might agentically develop new products and services or suggest new working practices that would bring the employing organisation competitive advantages in the near future. The main aim of the chapter is to develop a competence model that can later be used for both measuring and fostering intrapreneurship in business contexts. For this purpose, the authors conducted a systematic review of the literature on intrapreneurship published in the last 30 years. This chapter is complemented by an empirical contribution from the same author group, included in the second part of the present volume (see Kreuzer et al. 2017, this volume).

In Chap. 4, Raymond Smith explores the relationship between agency and work-related learning from a socio-personal perspective. Work learning is described as the exercise and manifestation of *epistemological agency*, meaning the “personal management of learning resources inculcated in the generation and development of knowledge” (Smith 2017, this volume, p. 69). He argues that such learning might best be understood and explored by taking into account three interrelated constituent aspects of agency, namely, (a) agency as property, (b) agency as relationship and (c) agency as transformation. Throughout his chapter, Smith illustrates his theoretical ideas by referring to a work incident experienced by one particular wholesale worker.

Michael Goller and Christian Harteis propose a conceptualisation and operationalisation of work agency in Chap. 5 of the book. On the basis of a literature review published elsewhere (see Goller 2017), the authors suggest that two different perspectives of agency are present in the current literature: (a) agency as *something individuals do* and (b) agency as a *personal characteristic of individuals*. They do not perceive these perspectives as theoretically exclusive. Instead, they integrate them within a larger conceptual framework that might lead to a better understanding of the complex discourses on agency within the literature. In the second half of the chapter, the authors derive and discuss three distinct components of agency as a personal characteristic: (a) *agency competence*, (b) *agency beliefs* and (c) *agency personality*. Both the derived conceptual framework and the three identified components are then used to propose an operational definition of agency.

In Chap. 6, Hye Won Kwon adapts a sociological life-course perspective on agency. In the first part of her chapter, Kwon argues that most life-course discussions of agency revolve around individuals’ subjective sense of agency (including control beliefs or future-oriented expectations). She argues that so far, there has been a lack of discussion on behavioural facets encompassing individuals’ persistent inclination to exercise agency. Consequently, in the second part of her chapter,

Kwon introduces *grit* as a concept covering such a behavioural facet. Grit refers to a noncognitive skill that can be defined as a “disposition of pursuing effort and interest over the course of years” (Kwon 2017, this volume, p. 111). Although empirical research on grit is still scarce, the results presented by Kwon indicate that the concept might indeed have exploratory power in explaining professional learning and development and possibly life-course attainments in general.

Chapter 7 by Nick Hopwood discusses agency in the context of three *epistemic dilemmas* present in professional social and health work, namely, (a) incompleteness, (b) fragility and (c) instability of knowledge. Epistemic dilemmas arise because “the nature, status and adequacy of knowledge in determining what to do next are called into question” (Hopwood 2017, this volume, p. 128). These are precisely the kinds of situations in which professionals are required to exercise agency. The theoretical ideas presented in the first part of Hopwood’s chapter are illustrated via an extensive discussion of two empirically derived cases. These occurred in an Australian parent education service centre that specialised in supporting families within challenging situations. The cases are further used to explain how Hopwood’s understanding of agency is related to professional learning and development.

In Chap. 8, Gerhard Messmann and Regina H. Mulder introduce *innovative work behaviour*, defined as “the generation, promotion and realisation of innovative ideas as well as the exploration of opportunities for innovation development in organisational practice” (Messmann and Mulder 2017, this volume, p. 142). The concept is viewed as a behavioural manifestation of agency. At the start of their chapter, the authors argue that innovative work behaviour is not only strongly related to the development of organisations but also—through reflection processes—to individual learning and development. Taking this as a starting point, the authors introduce a theoretical framework that relates work-related reflection to behavioural dimensions, to prerequisites and to the contextual factors involved in innovative work behaviour. The second part of Messmann and Mulder’s chapter synthesises the findings from four empirical studies which they conducted previously. The synthesis makes it possible to further explore the hypothesised relationships between work-related reflection, innovative work behaviour and professional learning and development.

In Chap. 9, Päivi Hökkä, Katja Vähäsantanen, Susanna Paloniemi and Anneli Eteläpelto explore the reciprocal relationship between *professional agency* and emotions in work contexts. To explore this, the authors conducted a qualitative meta-synthesis of five of their own empirical studies on the phenomenon in question. Based on qualitative data from about 40 professionals (interviews and group discussions with Finnish educators and leaders), they found a complex pattern of potential relationships between agency and emotions. Thus, they found that negative emotions such as feelings of fear or frustration appeared to foster agentic behaviours directed at the career or work practice of the professional concerned. However, positive emotions, such as feelings of satisfaction or enjoyment, were more likely to stimulate *agentic identity negotiation* (i.e. negotiation concerning personal interests, ambitions, beliefs or commitments). At the same time, emotions can themselves be an outcome of the exercise of agency. The researchers found that

opportunities to enact agency seemed to foster the emergence of positive emotions, while constraints on opportunities (disallowing the exercise of agency) were related to emotions with negative connotations.

Part I concludes with a chapter by Anneli Eteläpelto summarising the first eight theoretical and conceptual chapters (Chaps. 2, 3, 4, 5, 6, 7, 8 and 9). She highlights the complementary contributions of the various approaches to agency and learning in work contexts. She discusses the various ways of understanding agency in the chapters of Part I, highlighting four specific aspects: (a) core interpretations of agency, (b) the societal and sociocultural context of agency, (c) the role of the individual subject in agency and (d) the connections between agency and learning. Furthermore, on the basis of the chapters in Part I, she puts forward suggestions for future research on agentic perspectives on professional learning and development.

1.3 The Content of Part II: Empirical and Methodological Issues

The second part of the book begins with the contribution of Stephen Billett and Christy Noble (Chap. 11). Based on a research project, their chapter contains a conceptual discussion on co-working. The authors strongly argue that professional learning is most effective when individuals get the chance to work with other, more knowledgeable persons. These give access to their own knowledge and also support the learners in their efforts to actively apprehend the social practice in question. However, Billett and Noble argue that it is not social guidance alone that determines how and what is learnt; more particularly, it is individuals' *personally mediated efforts and actions* (i.e. agency). Learning "is premised on how [learners] construe what they experience at work and construct knowledge based on how they elect to apply what they know, can do and value" (Billett and Noble 2017, this volume, p. 205). The latter part of the chapter illustrates the conceptual framework applied, in terms of studying novice doctors' professional development. Based on a total of 34 qualitative interviews with Australian pharmacists, novice doctors, and senior doctors, the chapter describes how novice physicians learn to prescribe medications, the role played by different stakeholders in this process, and how situational circumstances (e.g. workplace hierarchies) affect the interactions between the stakeholders. Furthermore, the chapter presents practical implications for workplace pedagogics based on the findings.

In Chap. 12, Anne Edwards, Carmen Montecinos, Jennifer Cádiz, Paloma Jorratt, Lizette Manriquez and Carolina Rojas adapt a cultural-historical account of agency. Agency is thus understood to be revealed "in people's acts in actions in activities within institutional practices" (Edwards et al. 2017, this volume, p. 230). Throughout their chapter the authors apply this understanding to groups of professionals who have jointly built upon their respective resources to solve shared problems (thus exhibiting *relational agency*). Using this theoretical framework, the authors investigated

the effects of an intervention which sought to address educational inequalities in four Chilean schools. This ethnographic study—based on interview and observation data—focused on how relational expertise and the capacities for relational agency became constructed and exercised among professionals in the schools in question.

In Chap. 13, Kaija Collin, Soila Lemmetty, Sanna Herranen, Susanna Paloniemi, Tommi Auvinen and Elina Riivari are concerned with the relationship between *professional agency* and creativity in work contexts. They approach agency as actions taking place within professional practices. Hence, agency is perceived to be “practiced when professionals or communities influence, make choices and adopt stances in relation to their work and professional identity” (Collin et al. 2017, this volume, p. 251). Creativity, on the other hand, is concerned with “aspects of novelty, value and usefulness” (Collin et al. 2017, this volume, p. 251). The main aim of their ethnographic study was to understand how agency and creativity manifest themselves in the daily work of Finnish information technology professionals and how the concepts of agency and creativity relate to each other. Based on data consisting of 34 interviews and 89 open-ended questionnaire responses, the authors identified five themes of creativity: (a) sustainable problem-solving, (b) the creation of novelty, (c) the development of work methods, (d) a state of mind and attitude and (e) freedom and autonomy at work. The chapter further describes how these themes were related to three notions of agency (agency as a prerequisite for various phases of creativity, agency as a synonym for creativity and agency as the outcome of creativity).

Chapter 14, by Debra Palesy and Stephen Billett, is concerned with Australian home care workers’ learning and development in the absence of expert guidance. Many of these workers do not experience close support or guidance from more experienced colleagues, due to the fact that their daily work is practised in the privacy of their clients’ homes. In these circumstances, home care workers are required to agentially manage their own learning and development. Based on qualitative interviews with 14 home care workers and an observation study, the authors identified five emerging *agentic actions* that were often engaged in by the participants: (a) actively drawing upon past experience and knowledge gained somewhere else, (b) deciding to apply already learnt knowledge where a personal benefit is perceived, (c) relying on their own assertiveness and resilience, (d) deliberately seeking to engage with peers in order to exchange information and knowledge and (e) intentionally consulting written material while they were in the workplace. On the basis of empirically derived insights, the chapter ends with a range of strategies for supporting learners in the absence of the direct guidance afforded by more experienced colleagues or designated teachers.

Chapter 15, contributed by Mira Ylén, presents an ethnographic study of software developers’ work. The chapter focuses on the organisational practices permitting the agency of professionals working in a project-based and low-hierarchy organisation. Professional agency, viewed in terms of professionals making choices, exerting influence and taking stances in their work, was investigated from the point of view of what are regarded as professional virtues. Ylén describes the following agency-enabling practices identified in the study: (a) democratic work structures, (b) openness to an experimental approach towards the work, (c) a climate that

fosters self-directed learning and development and (d) the organisation of daily work within project teams. Organisations that adopt these practices—including a shared view of them as *organisational virtues*—are seen as providing extensive spaces for the enactment of professional agency during the working day.

Chapter 16, contributed by Antti Rajala and Kristiina Kumpulainen, aims to understand *teachers' agentic orientations* towards educational reforms. The particular focus is on the adoption of a new digital learning environment in daily instructional work practices. The authors conceptualise agency as the set of “teachers’ critical evaluations and attempts to reconstruct their work conditions” (Rajala and Kumpulainen 2017, this volume, p. 312). They report on a qualitative study on teacher agency conducted with Finnish teachers. The study revealed four distinct temporal orientations of agency: (a) practical-evaluative (i.e. teachers actively trying to implement the reforms in the face of pressing contextual challenges), (b) reproductive (i.e. deliberately reproducing past ways of working while using the new system and applying the reform), (c) critical-projective (i.e. critically considering how to use the potentials of the new system based on personal ideals and objectives for the future) and (d) creative-projective (i.e. envisaging new teaching modes that will incorporate the reform but go beyond the originally intended practices).

In Chap. 17, Hannele Kerosuo approaches the topic of agency by applying cultural-historical activity theory. The focus of her ethnographic study was on the emergence of *transformative agency at a collective level*. Within the domain of construction and planning, Kerosuo investigated agency, which she saw as manifested “when practitioners take initiatives to change their practices by examining problems and by explicating and envisioning new possibilities for the identified problems in their work activity” (Kerosuo 2017, this volume, p. 336). The chapter illustrates how transformative agency emerges in the development of “knotworking” and, further, how the initiation of transformative agency can be supported and fostered. Knotworking refers to the collaborative process of a group when it ties, unties and reties apparently unconnected threads and actions. The research questions were answered via a participant observation study of an interdisciplinary group of construction professionals who were designing a school building.

Chapter 18, contributed by Katja Vähäsantanen, Susanna Paloniemi, Päivi Hökkä and Anneli Eteläpelto, focuses on the promotion of professional learning and agency through *educational interventions*. The study presented in the chapter investigated how professional agency can be promoted and supported through the dialogical learning arena of work conferences. The aim of their study was to evaluate how work conferences can be used as agency-promoting learning arenas, so that they advance cooperation and interaction across the professional and hierarchical borders of work organisations. For this purpose, the authors collected longitudinal data through written assessments directly after three work conferences, plus follow-up questions 3 weeks later. The empirical material (obtained from more than 140 participants, working in a Finnish university or a hospital) was analysed using qualitative and quantitative content analysis. The study found evidence that work conferences are indeed suited to fostering individual learning and development, as

well as the professional agency of participants. In addition, work conferences might be used as tools for organisational development purposes.

In Chap. 19, Christine Kreuzer, Susanne Weber, Sandra Bley and Michaela Wiethe-Körprich report a continuation of their efforts to operationalise and validate the construct of *intrapreneurship* (IP) as a manifestation of work-related agency (see also Wiethe-Körprich et al. 2017, this volume). Using a known-groups approach, the authors aimed to test whether their operationalisation, based on a complex assessment tool evaluating IP competence, fulfilled construct validity. In other words, the assessment tool was used to measure IP competences for groups that should differ in their IP scores according to theoretical considerations. The analysis of the data (obtained from 233 test participants) employed IRT scaling, analysis of variance and Scheffé post-hoc tests. Their results were broadly in line with their theoretically derived assumptions, namely, that (a) general education fosters IP competences, (b) enrolment in a vocational and educational training (VET) apprenticeship boosts the development of IP competences and (c) enrolment in a VET apprenticeship can compensate for higher general education levels in regard to IP competences. Thus, the chapter discusses agency in terms of intrapreneurship competence and its development through apprenticeship training.

Chapter 20, by Isabel Raemdonck, Jo Thijsen and Maurice de Greef, introduces the concept of *self-directedness in work-related learning processes* (SDL) as a special instance of agency at work. The main aim of their reported research was to construct and validate a 14-item scale that could be used to measure SDL in quantitative studies. For this purpose, Raemdonck, Thijsen and de Greef conducted four consecutive studies. Using exploratory factor analysis, Study 1 tested the unidimensionality of the developed scale using a dataset of 940 employees from Belgium with low and high qualifications. Study 2 tested unidimensionality and also discriminant and convergent validity, employing confirmatory factor and correlation analyses; for this purpose it used a dataset of 408 employees from Belgium with low qualifications. Study 3 replicated parts of Study 2; the sample here consisted of 787 Dutch workers with low qualifications. Study 4 tested the measurement invariance between differently qualified groups of adult workers. It used two samples, consisting of 476 employees with low qualifications and 464 employees with high qualifications. The findings from all four studies strongly supported the psychometric properties of the developed scale.

In Chap. 21, Jade Harwood and Dominik E. Froehlich focus on *proactive feedback-seeking* as a manifestation of agency in the domain of teaching. Proactive feedback-seeking is defined as “learning activity that is self-initiated and a future-focused attempt to gain evaluative information about oneself or about one’s work” (Harwood and Froehlich 2017, this volume, p. 426). The authors were interested in how teachers’ engagement in proactive feedback-seeking was related to both teaching performance and the general wellbeing of the actors, viewed in terms of “flourishing”. Flourishing was viewed as connected to individuals’ positive emotions and

to overall psychological and social wellbeing. The hypothesised relationships were empirically investigated using a PLS-based structural equation modelling approach, with data from 42 teachers and teaching assistants. Since the empirical findings did not fully match the authors' theoretical assumptions, a qualitative follow-up study was conducted. This study used interview data to obtain additional insights into the proactive feedback-seeking and flourishing of teachers. The chapter ends with recommendations on how to foster feedback-seeking behaviour at work.

Chapter 22, contributed by Crina Damşa, Dominik E. Froehlich and Andreas Gegenfurtner, reflects on the empirical and methodological accounts included in Part II of this volume. Damşa, Froehlich and Gegenfurtner discuss the chapters in terms of the units of analysis applied within them (e.g. agency as an individual construct versus agency at a collective level) and the analytical approach pursued (e.g. a qualitative-explorative research versus scale development). They also consider the concrete operationalisations of agency and work-related learning selected by the various authors and employ the conceptual framework of Emirbayer and Mische (1998) to discuss the locus and the nature of agency within the relevant chapters.

1.4 The Content of Part III: Concluding Comments

A concluding chapter (Chap. 23) by the editors, Susanna Paloniemi and Michael Goller, closes the book. They discuss the many facets of agency presented throughout the book, viewing them as complementary. They see two dimensions, each embodying polar opposites, as helpful in gaining an overall perspective. These are (a) agency understood in terms of personal capacity versus agency as behaviour and (b) agency analysed primarily as an individual phenomenon versus agency at a collective level (i.e. exercised by groups of individuals). It is acknowledged that placing chapters within these dimensions involves considerable simplification. Nevertheless, such a perspective is of assistance in setting out current approaches to agency and professional learning and development, as represented in this book. The chapter ends with suggestions for future research on agency within professional learning and development.

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Part I
Conceptual and Theoretical Issues

Chapter 2

Bounded Agency in Professional Lives

Karen Evans

2.1 Introduction

The expression of bounded agency in a life course perspective is a temporal process. This means that biographically produced positions are present in decisions and action-taking in the contingencies of the present moment. This temporally embedded agency can be individual or collective. Past experiences as well as possible futures can be reflectively reformulated and reimagined. Bounded agency also expresses itself in the social landscape through the dynamics of multiple, interlocking socio-biographical journeys in a social terrain. The relational and temporal approach makes a conceptual advance in connecting changing social conditions and professional lives. Agency in adult life operates through engagements in and through the social world; it is exercised through the environments and institutional practices of everyday life in changing social landscapes. Bounded agency is a feature of actors' engagements in the complex social ecologies of work, learning and social responsibility. The spaces in which human agency is exercised are regulated by professional bodies, through the setting of professional standards and by public policy, through the regulation of the employment relationship and through wider systems for the management of employment and government interventions directly targeted at the workplace.

The development that takes place through the exercise of human agency is not that of the self-propelled autonomous individual but, rather, relational and profoundly social in nature. What binds us also contains affordances that enable us to think, feel and act. Conceptions of agency as bounded, discourses on professional knowledge, capabilities and the sense people have of self-authorship and capacities

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for self-direction in their professional lives can be connected in a new dialogic endeavour between communities of thought. Furthermore, the scope for agentic action in professional life reflects the bounds on agency and the affordances for learning that are embedded in work environments and institutional practices. Two occupational cases considered in the second half of this chapter show how the agentic processes inherent in the post-qualification learning of nurses in regulated hospital environments differ profoundly from the learning processes that characterise the freelancers' development of their craft as they simultaneously and continuously have to reinvent themselves in pursuit of contract-based work. The sources of variation that come from the contexts of work, as well as the input of practitioners themselves as they put different forms of knowledge to work, are interpreted according to an interdisciplinary conceptualisation of human agency as bounded in an interplay of processes of structuration, internal-external control and the potential for social reproduction or transformation.

2.2 Towards an Interdisciplinary Understanding of Human Agency

A comprehensive understanding of human agency and the multiple influences on the acting individual begins with recognition that the life course is profoundly affected by macroeconomic conditions, institutional structures, social background, gender and ethnicity, as well as acquired attributes and individual resources such as ability, motivation and aspirations. Individual development takes time and reflects cumulative experiences. The social contexts of human development range from interactions with significant others to macrosocial circumstances. Turning points in the professional life course, such as from full-time education to full-time employment or from work to retirement, are not only shaped by institutional and labour market structures but also involve developmental tasks that challenge the individual actors as well as testing institutional processes. While individual decision-making is bounded by social institutions and the wider macrosocial conditions, it is not determined by them.

The idea of agency as the ability to give direction to one's life is pervasive in the economic and social sciences and in humanities, yet frameworks for understanding human agency are dispersed. In the field of economics, notions of agency centre on the rational choice of actors, but the notion of rational choice does not necessarily take into account the role of social and cultural resources and individual values (Sen 1985; Goldthorpe 1998). Cultural variations and the role of social structures in human development are the primary focus of sociology, whereas the multiple facets of individual functioning are the main concern of psychology. The disciplines meet where they aim to examine agency in terms of the interactions between individual and context. While this interconnection is widely recognised, lines of inquiry have developed independently in recent decades. Within sociology, research has tended

to focus on the study of the life course as externally shaped by institutions, structural opportunities and historical change, in which life course dynamics and expressions of individual agency are contingent on a given sociohistorical context. Psychology, conversely, has concentrated on the study of individual adaptation and development across the life span, conceptualised as lifelong adaptive processes governed by principles of self-regulation and psychological functioning (Evans et al. 2013). While the malleability of individual development and functioning through social influences is acknowledged within psychology, the emphasis is on the more proximal social contexts, such as the family, social networks and peers, rather than on more distal sociohistorical or institutional influences.

The notion of agency as a bounded lifelong process that is both biographically produced and socially embedded brings the discussion of agency into an interdisciplinary space. Increasing the field of view of sociologists to take into account individual motivation and preferences will result in a better understanding of modes of individual agency. For psychologists, increasing the field of view means taking into account the role of institutions and social structures in ways that contribute to a better understanding of individual adaptation in times of social change and provide the means to assess how social and institutional change is affecting individual functioning. Both can also learn from social anthropology in acknowledging how social processes are embedded in cultural and subcultural differences. Expanding disciplinary perspectives in this way can enhance our understanding of human agency in changing social contexts and enable us to reconsider ways in which economic, social and cultural factors influence and impede individuals' attempts to control their lives and their capabilities to respond to opportunities and to manage the consequences of their choices.

2.3 Rethinking the Role of Personal Agency and Its Limits

Bounded agency has its roots in a dialogue between ideas and evidence (Evans 2002, 2007) arising from a series of comparative studies of learning in early adult life (between the ages of 18 and 25) in selected cities in England and the western and eastern states of Germany. These studies support the thesis that environments which are highly "visibly" structured are associated in people's minds with the idea of reduced scope for individual, proactive effort. In highly structured environments, opportunities are open only for those following clearly defined routes. Consequently, it is those same structural opportunities or barriers that are held responsible by individuals for any failure. Furthermore, an environment such as the English labour market in which the workings of structures are strong but increasingly difficult to read can foster a belief that "opportunities are open to all" such that people blame themselves for their failures in education and the labour market. In the highly structured Western German system, external factors can more easily be held responsible for failure, giving people greater scope to develop a positive sense of self in early adult life (Evans et al. 2000, p. 134).

Structural, institutional and cultural processes produce both social regularities and heterogeneity in life course patterns. According to Beck and Beck-Gernsheim (2002), the face of society is changing dramatically, with a clear distinction between individuals at the very top and the very bottom of society and those in between who have to bear the brunt of ambivalences and uncertainty, striving to move into the top category or to remain in control of their life but in constant danger of falling down (2002, pp. 49–51). While the permanently underprivileged and excluded might be growing, there is also much movement of individuals in and out of poverty. The search for new concepts and research methods to differentiate between those at the top and bottom of the social ladder and the fluidity of new “hybrids” located in between has been connected with the development of the “individualisation” hypothesis that the person learns to “conceive of him or herself as the centre of action, as the planning office with respect of his/her own biography” (Beck 1992, p. 135) in the attempt to minimise risk and maximise personal opportunities. An interdisciplinary debate on human responses to the sources of uncertainty in people’s lives can connect the distal and proximal perspectives on human agency in an exploration of concepts and models of biographical negotiation, as processes of decision-making and action-taking reflect the exercise of contextualised preferences and the ability of individuals to achieve the functionings that they have reason to value (Sen 1985; Evans et al. 2013). Life chances are produced through the complex interplay of agency and material resources (Côté 2013). In personal and professional life, adults are motivated to learn and develop their capabilities in particular directions because these are central to their workplace goals or life priorities at that particular time. The intersection of the proximal and distal has been claimed as terrain both for an emerging sociology of the individual (Lahire 2003) and for a socially evolved version of developmental psychology (Sokol et al. 2015).

Exploration of three intersecting dimensions (see Fig. 2.1) opens up the individualisation hypothesis to debate in an expanded interdisciplinary space.

Structures Shape Action – Individualisation: The first dimension extends from social determinism at one end of the continuum, in which human agency does little to disrupt the structural forces that determine outcomes, to individualisation at the other end, as encapsulated in the idea that people are agents who are compelled to take individual responsibility for the construction of their own biographies. While Sen (1985), Bourdieu (1990), Ziehe (1996), Bandura (2006) and Côté (2013) attend to the structural influences on action, they do so with different degrees of emphasis on the internal processes of the acting individual.

Emphasis on Internal Control – Emphasis on External Control: Human agency involves self-awareness and personal meaning-making integrated with self-control abilities (Sokol et al. 2015). This second dimension explores the limits to personal control in different aspects of human functioning. Some aspects of environment and personal circumstances are extremely difficult to change. Others can be strongly influenced by the exercise of initiative and learning. Social psychologists and sociologists who consider the internal processes of the acting individual as mutually constituted or reciprocal connect agency with concepts such as self-efficacy (Bandura 2006) and “makeability” (Ziehe 1996). Furlong and also

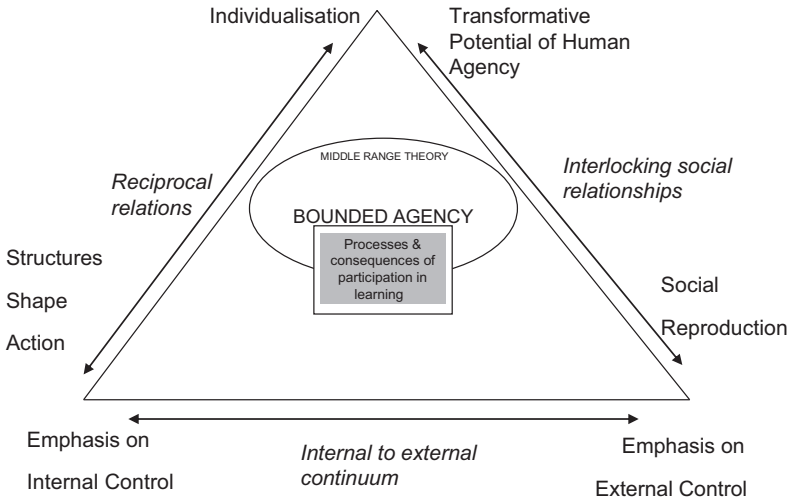


Fig. 2.1 Dimensions of bounded agency

G. Jones (2009), by contrast, place greater emphasis on the controlling functions of social structures.

The third dimension of *Social Reproduction – Transformative Potential of Human Agency* focuses on the potential for social change, exploring the limits to individual and collective scope to break the mould of standard biographies by their actions. Goldthorpe (1998) has emphasised the overriding importance of analysing the conditions of agency and action, acknowledging the interplay of internal and external factors and subjectivities. Furlong and Cartmel’s (1997) position identifies structural determinants acting through chains of “human interdependence”, with transformative potential limited by the “epistemological fallacy” argument that uncertainty of outcome only appears to have increased. Bourdieu’s (1990) articulation of social reproduction, in contrast, emphasises subjectivities of the acting individual and explores agency in relation to habitus and field.

Sen (1985) stands apart from these positions by focusing attention on variations in contextualised capabilities within social groups, connecting functional capabilities with actual life chances and opportunities. Furthermore, capacities of individuals and groups to influence their environments can be linked to the social cognitive view of reciprocally changing conditions (Bandura 2006) as human agents participate in practices that contribute to the conditions that can promote, sustain or limit their own agency. As Biesta and Tedder (2007) explain, people do not act *in* environments; they act *through* environments and within complex social ecologies (Elder 1994). In their professional lives, workers engage in activities with differing degrees of intentionality to learn. Practitioners draw continuously on their prior knowledge, both codified and tacit, and are generally disposed to learn new capabilities that coincide with their workplace goals (Billett 2006). These goals take many forms and may range from moving to a new position in or beyond the organisation, to

improving the functioning of their team or securing employment rights for themselves and colleagues through a professional association.

2.4 Articulating Visions of Individual-Biographical Dispositions with Structural Conditions

Taking into account the dimensions in Fig. 2.1, it is possible to develop hypotheses about the structuring effects of contexts while attending to biographical dispositions to action. As Elder (1994) has observed, all social transitions entail risk of losing personal control, with effects dependent on biography and on the persons' material (economic) and social situation. The empirically grounded concept of *bounded agency* views the actions that people take in the contingencies of the present moment as bound up with subjective perceptions of the structures they have to negotiate and the interlocking social relationships which influence them. Agency is socially situated, constituted but not determined by environments and by internalized frames of reference as well as external actions. For example, an understanding of how human agency is exercised in professional lives requires insights into the realities of work: how people think and feel their ways into work identities; how they respond, individually and collectively, to the structures and forms of work organisation imposed on them; how they use their skills, knowledge and emotions; and how they cope with pressures and stress.

2.4.1 *Socially Positioned Lives*

The focus thus shifts from “structured individualisation” towards people as actors, without losing the perspective of structuration. As actors move in social landscapes, spaces open up for action which are not wholly reducible to the effects of social reproduction or underlying structural features. Bounded agency keeps the boundedness of socially positioned lives in view as well as the internalised processes of self-awareness and personal meaning-making, recognising that individuals differ in the ways in which they interpret their situation and act upon it to achieve the functionings that they have reason to value. Bounded agency is not determined by relational networks or social structures but recognises that the embeddedness of human agents in these relations and structures both constrains and extends dispositions to act, leading to new expressions of agency. As Ratner (2000) argues, agency is not intrinsically creative and can only be enhanced by enhancing the social relations which constitute it. Herein lie the explanations of the empirical heterogeneity found in life course patterns as well as the social regularities in outcomes that persist. Both can be accounted for by the social factors that influence variations in human responses rather than irreducible differences between social groups (Lahire 2003).

For the concept of bounded agency to be further elaborated in ways that inform research, practice and policy, we also need deeper insights into the agency involved in taking action, how these agentic beliefs are developed, what drives them and how they related to dispositions of people to act in particular ways.

2.4.2 *Self-Directed Learning*

A central tenet of the developmental psychologist approaching this matter is that agency is essentially self-directed – a stance that most sociologists refute. Perspectives on adult learning enter the interdisciplinary space from opposing positions on the extent to which self-directed activity in adult life can be the site for emergence of the capabilities to give direction to one's life. Brookfield (1995), for example, has long warned against views of adults as self-contained, volitional beings engaged in individual projects. Sokol et al., meanwhile, assert their “goal to rise above this debate and make self-directed activity the site of the emergence of agency” (2015, p. 287).

The lens of bounded agency allows self-directed learning to be viewed in ways which bring into focus the social, cultural and relational dynamics of the acting person. The agency inherent in self-directedness is shown to be emergent and biographically produced as individuals confront, negotiate and reconstitute their position in the world. Agency is not just about acting, but it is about making a difference to oneself and others (Giddens 1984) and strikes a balance between the power of individuals and collective commitments, in Sen's (1985) capability approach. Where bounded agency is understood to be both produced by and exercised in a process of biographical negotiation – where both the self-direction and the bounds are understood to be socially and temporally embedded and amenable to change through action which has both individual and collective consequences – the debate about self-directedness in learning can be fundamentally reframed.

Carré's call for learning in adult life to be “thought out upside down” (2013, p. 12), from the learner-agent's perspective, can be achieved in a way that articulates visions of individual-biographical dispositions with structural conditions. Bounded agency can be characterised by a sense of reflexive self-authorship that translates into an expansion of human capabilities through learning or at least the potential for future learning. For example, narrative accounts of women aged 50 looking back on their life course show how specific relationships and workplace or life experiences can be construed as “activating events” that have triggered personal and professional development, often entailing growth of confidence and willingness on the part of adults to develop themselves in new ways (Evans and Biasin 2017). The reverse can also be true – individuals can become trapped by events and locked into their own stories. However, the impact of these shifting orientations on life trajectories, and the degree to which such changes are sustained over time, is constituted through personal, cultural and institutional influences. In some cases, activating relationships have stimulated women towards broadening of horizons for action. In others,

recurrent patterns of crisis and the search for stability characterise the ups and downs and turning points of the life course, in culturally specific ways. In examining expressions of agency in women's life history narratives and self-representations, self-direction, in a "life course" definition, can be identified in the extent of women's capabilities to analyse their lives and make sense of personal and professional situations in ways that allow for potential development, enrichment or growth. These forms of sense-making often reveal the therapeutic power of narratives (Silva 2013; Franceschelli et al. 2015; Ketokivi and Meskur 2015) in evaluating the scope for personal agency in challenging life situations.

The expression of bounded agency in a life course perspective has, so far, been characterised as a temporal process. Biographically produced positions are present in decisions and action-taking in the contingencies of the present moment. This temporally embedded agency can be individual or collective. Past experiences as well as possible futures can be reflectively reformulated and reimagined. Multiple flows of influence come into play in ways that are always relational, sometimes reciprocal and may be mutually reinforcing or limiting. While these change over time, agentic action in adult life is, at any particular time, embedded in engagements in the social world, the environments and institutional practices of everyday life in changing social landscapes.

2.5 Focusing on Professional Life

In the context of professional learning, action can be considered from the perspective of how adults exercise agency in forging what they perceive, at any given time, to be their professional career paths or trajectories. Agency can also be considered from the perspective of the processes that underpin the directing of action in the practices of their day-to-day work. In Emirbayer and Mische's (1998) temporal conception of agency, routines, habits and beliefs are brought from the past into the contingencies of the present moment, and agentic action reflects not only these habits, routines and beliefs but also the conceptions of the acting individual of what are the possible outcomes, both proximal and distal. Yet it is not just routines, habits and beliefs which are brought into the contingencies of the present moment but a variety of forms of knowledge, ranging from personal and tacit knowledge to the specialist scientific and professional forms of knowledge that fundamentally differentiate professional work. Knowledge is therefore "put to work" in all forms of agentic action and is integral to an understanding of the social processes that both characterise particular professions and also distinguish between them.

2.5.1 Agentic Action Embedded in Environments and Institutional Practices of Professional Life

The scope for agentic action in professional life reflects the bounds on agency and the affordances for learning that are embedded in work environments and institutional practices. Manifestations of *bounded agency* can be analysed according to the interplay of the three conceptual dimensions associated with structuration, internal-external control and reproduction-transformation. The first dimension keeps in view the ways in which work structures interact with perceptions of individualised scope for action and “choice”; the second, the internal-external continuum reminds us of the limits of internal and external sources of control on individual and group action; the third highlights the possibilities for transformative potential of human agency that arise from interlocking social relationships amidst the self-evident socially reproductive processes of workplaces and institutions. For example, focusing on the micro level shows the significance of forms of work organisation and how learning often arises from people working together and cooperating in daily work tasks. At least six types of workplace-based learning arise naturally as people work collaboratively on tasks: people can seek out and observe those who are “knowledgeable” about the task or activity; they can involve themselves in peer support, in focused workplace discussions, in practicing without supervision, and in searching out new information, ideas and solutions. They may also benefit from mentoring and coaching (Taylor et al. 2009). Learning that results from combinations of activities such as observation and focused workplace discussion depends on worker motivation and dispositions to learning, workplace relationships and the affordances of the wider environment (see also Harwood and Froehlich 2017, this volume; Messmann and Mulder 2017, this volume; Palesy and Billett 2017, this volume). Professionals engage with varying degrees of intentionality to develop their practice. This development takes both adaptive and productive forms as professionals strive to adapt their practice to changing situations and to produce new responses and ways of working to meet the challenges of unpredictable circumstances or problems for which there are no readily identifiable solutions.

The affordances for this learning and development are shaped by professional norms, traditions and regulatory frameworks that govern the employment and professional relationship. The norms and traditions are socially reproductive by definition; the latter are structures that are powerful in shaping action. Learning affordances are also profoundly affected by work organisation. Rich learning engagements can occur, with transformative potential, when “doors are opened” to opportunities to expand and share knowledge and skills in supportive workgroups. Conversely, unintended negative influences on learning may occur, for example, where the interdependencies of the workplace are undermined by feelings of lack of trust (Billett 2006).

International case comparison (Taylor et al. 2009) has shown the importance of interplay between these forms of “in situ” workplace-based learning and participation in forms of instruction or learning events that are distanced from the particular site of work. Triggers for further learning may arise from a company ethos of quality

performance or safety or from participatory management and collaborative working to solve specific problems. Where attitudes of curiosity, inquiry and imagination are encouraged and supported through access to wider educational content, inner realisation of the personal and work benefits of learning often follows. Agentic involvement in day-to-day workplace-based learning tends to be less motivated by monetary rewards or upward mobility but is often spurred on by a need for challenge or variety in the everyday work routine (Taylor et al. 2009). Conversely, participating in the more formal workplace programs, courses and workshops can ignite the desire to do things differently, acting as catalysts for worker involvement in varying practices and in innovation.

Transformative potential is developed, where the wider context is supportive. Developing creative interplay between different modes of learning in professional development requires us to keep the dynamics of knowledge and pedagogy in view, as well as the multiplicity of purposes that derive from the contexts of employment and the agency of the acting individual. In professional life, learning and development take place as practitioners focus on the practice while attending to the knowledge frameworks that underpin the directing of work and the exercise of judgement that is involved (Evans 2015). The highest levels of professional learning and development are manifested in *knowledgeable practice*, that is, practice that is characterised by the exercise of attuned and responsive judgement when individuals or teams are confronted with complex tasks and unpredictable situations at work.

2.5.2 Putting Knowledge to Work as Bounded Agency in Action

These relationships have been investigated through two new research studies, which set out to explore the part played “knowledge recontextualisations” as agentic processes in professional development in contrasting occupational sectors. Knowledge recontextualisation, in this formulation, implies agentic involvement as knowledge of different kinds is “put to work” in different environments. Evans et al. (2009, 2010) have argued that for knowledge generated and practiced in one context to be put to work in new contexts, it has to be recontextualised agentially in ways that simultaneously engage with and change those practices, traditions and experiences. This approach to recontextualisation has drawn on (1) developments of Bernstein’s idea that concepts change as they move from their disciplinary origins and become a part of a curriculum (Bernstein 2000; Barnett 2006) and (2) van Oers’ (1998) idea that concepts are integral to practice and change as practice varies from one workplace to another. These notions have been substantially expanded to embrace the ways in which adults themselves change as they recontextualise concepts and practices in different settings and think and feel their ways into new professional identities. This is a continuous agentic process, bounded by workplace relations and the organisation of work as well as by the knowledge and experience of the

professional. Two subsequent research studies have built on this approach, by focusing attention on how practitioners put knowledge to work, combining and using different forms of knowledge (propositional, personal, procedural, tacit, experiential) as they move between sites of learning and practice in contrasting occupational fields. The agentic processes involved in strivings to become knowledgeable practitioners have come to the fore in these new analyses, which are outlined in the next two sections.

2.6 Bounded Agency in the Context of Regulated Public Sector Professional Practice

The recent research study “Academic Awards and Recontextualising Knowledge” (AaRK) reported by Magnusson et al. (2014) has focused on the ways in which newly qualified nurses experience their early years as qualified practitioners in hospitals. This study reveals some hidden aspects of agentic professional development and supportive environments in regulated public sector practice.

As a new registrant in one of the four fields of nursing practice, the newly qualified nurse (NQN) has to show evidence that she/he has met standards for registration set by the Nursing and Midwifery Council. To assist with the recognised reality shock experienced by NQNs, a period of “preceptorship”, a form of supervised practice, is seen as necessary to provide a safe period of learning to support the transition to confident practitioner (Muir 2013). Newly qualified nurses often feel they can be left to “sink or swim” as they make the transition to fully operational qualified nurse, as Allan et al. (2014) have shown. A central challenge involves being able to delegate and supervise bedside care. Most of the learning in the preceptorship period is ward-based as NQNs learn from day-to-day practice in health care teams. Some timetabled instruction in the nursing preceptorship covers codified aspects of procedural and work process knowledge. But unlike disciplinary or subject knowledge, where there are clear criteria for combining knowledge to lead to the goal of greater abstraction and depth in understanding, there are few rules about how to structure and sequence content towards the goal of knowledgeable practice, as the latter often depends on the “invisible” learning that takes place. The invisible learning is often triggered by particular workplace activities or events and the particular context in which they occur.

Knowledge recontextualisation takes place when the practitioner recognises a new situation as requiring a response and uses knowledge – theoretical, procedural and tacit - in acts of interpretation in an attempt to bring the activity and its setting under conscious control. The AaRK study data have shown (Allan et al. 2014, 2016) how NQNs strive to manage uncertainty and bring order to unexpected and new situations in ways which use, stretch and challenge their knowledge in all of its forms. The NQNs learn not only to enact established workplace practices and procedures, in *adaptive* forms of knowledge recontextualisation, but also to modify

their responses in the search for solutions to unexpected occurrences or in the light of experiences of mistakes they, or others around them, have made. They learn through this process to develop their judgement of what constitutes safe practice and enact it through effective delegation or appropriate situations for learning from co-workers. Learning through difficult experiences and through mistakes is most readily associated with *productive* forms of knowledge recontextualisation, while counterexamples have shown how defensive practices can sometimes be traced to difficult experiences that have not been fully worked through with supportive debriefing. The deepening of adaptive to productive learning has been shown to be crucial for activities such as delegation, where there are few pre-existing guidelines and where the development of attuned judgement is crucial to effective practice.

In their frequent accounts of “muddling through”, newly qualified nurses are adapting existing knowledge of many different types to respond in the contingencies of the present moment to multiple pressures and demands. Their responses are themselves contextualised in the routines and protocols of record-keeping, patient confidentiality and safety checks. They are also modified according to workplace relations and the organisational hierarchies that influence how NQNs communicate with health care assistants, doctors and their mentor. Knowing when, how and with whom to communicate in an emergency or unpredictable situation can be critical to the outcome. The NQN is thus building knowledge of how to work with the protocols and manage the workplace relations that are embedded in clinical practice. The findings show how NQNs come to embody knowledge cognitively and practically through these agentic processes. They show how enhanced knowledge-aware mentorship that recognises the power of invisible ward-based learning can support professional development towards the goal of knowledgeable practice.

Interviews and observations repeatedly highlighted having to negotiate the busyness of the ward situation. These negotiations entail expressions of agency and an awareness of the ways in which practitioners’ responses in the present moment are bounded by relationships and the particular situation as well as their own habits, routines and beliefs in their own capabilities. An NQN, for example, describes both her abilities to monitor and prioritise in critical settings (expressions of agency, as she puts knowledge to work) and her feeling of being “overwhelmed” by the demands (the situational challenges to agentic action). She describes how she was on a late shift, monitoring somebody who was critically ill every hour. Her account shows what the “contingencies of the present moment” actually mean in practice, as she explains how she decided to “pull out” a team of doctors to assess the patient, giving priority to this over attending to two people who were waiting to be discharged and waiting for their paperwork. A new admission from accident and emergency department arrived at the same time, and she was aware that she also had to do the drug rounds as it was six o’clock. This newly qualified nurse describes her feelings over being overwhelmed but nonetheless copes with the situation as best as she can.

Here, agency is expressed, even when feeling overwhelmed, in her attempts to read the situation and gain control over it. These and similar cases are discussed by Allan et al. (2014), showing how the tolerance from colleagues that is a key

ingredient in these situations gradually decreases as the newly qualified nurse is increasingly given responsibility and is expected to cope. In this case, agency can be seen as bounded in an interplay of lack of confidence and limits that close supervision places on action, reflecting the dimension of internal control mediated by the regulatory hospital environment and the immediate work context. A supervisory process that actively enables productive knowledge recontextualisations can help the newly qualified practitioner to gain mastery of delegation and prioritisation.

Newly qualified practitioners are shown to recontextualise many forms of knowledge in the workplace to emerge as competent staff nurses capable in their own eyes and recognised by the ward team as capable of managing a section of the ward and eventually a shift. This is a professional development process in which agency is exercised and its bounds are negotiated in a liminal space where novice status is recognised and tolerated by staff. The liminal space is where reformulation of knowledge into new patterns takes place and is linked to action. This process of liminality takes time and can become transformative. Phases of liminality are characterised by uncertainty and contradiction as newly qualified practitioners have to assume authority and accept accountability while feeling that they are still learning and are not recognised as fully competent. This places them at times in difficult situations with the staff for whom they are responsible, notable health care assistants. Newly qualified practitioners learn to manage their authority as part of the agentic process of thinking and feeling their way into a professional identity (Evans et al. 2010). Allan (2007) and Bruce et al. (2014) suggest that the liminal space is where identity is played out safely, and newly qualified practitioners are expected to move out of this space as they become increasingly competent and confident. The AaRK Project has reviewed the support functions within the National Health Service (NHS) that have been introduced to recognise and support this liminal journey, in the preceptorship course and most notably in the tolerance expected from clinical colleagues.

As fully qualified practitioners move beyond the liminal stage, knowledge undergoes further recontextualisations as practice varies from workplace to workplace and from situation to situation, and practitioners exercise and attune their professional judgement. Questions arise as to why some early career professionals seem better able to negotiate the liminal space and others to find difficulty in doing so. Practitioner capabilities, changing relationships in reconstituted NHS teams and the wider challenges of rapidly changing and busier NHS services are interconnected in a wider social ecology in which the agency of the acting individual has many manifestations and possible outcomes.

2.7 Bounded Agency in Freelance or Contingent Work Contexts

The public sector scenario of highly regulated practice can be contrasted with the insecurities of freelance work in the cultural and creative industries. A second research study using the lens of knowledge recontextualisation set out to investigate how best to support the professional learning of freelancers in the film and TV industry (Bound et al. 2014, 2015). The contrasts with the regulated public sector context are striking. This research has also highlighted how the relationships between professional learning and the agency of the acting individual are mediated by the particular occupational affordances of the sector. Freelance work in the film and television industry is characterised by a combination of freedom and autonomy with a lack of stability and security. Diverse work opportunities can offer a plethora of learning opportunities but can also bring heavy workloads. The evidence indicates that learning on and through the job is most highly valued by practitioners, while having high levels of reflexivity helps a freelancer refine their skills and knowledge and use them across multiple locations. The development of knowledgeable practice entails constantly monitoring and responding to changing practices and technology, shifting work patterns and needs within the industry, which freelancers can only address by engaging in work and interacting with other industry players. Learning how to navigate this landscape effectively requires freelance film and television workers to develop multilayered or hybrid professional identifications with their craft and freelance status. Not only is craft important, in terms of understanding the technical and aesthetic, but developing the “entrepreneurial self” is crucial for understanding how to maximise their opportunities to get work. Workers develop aesthetic and “entrepreneurial” dispositions as well as knowledge and skills through doing the work. Having to be “malleable” and having the ability to “swallow your pain” are examples of expressions used by freelancers to capture the pressures to having to fit the requirements of the contractor and task at hand, to sustain work and survive in the profession.

The learning of freelancers as they move from one project can expand as they put multiple forms of knowledge to work, in ways that are not easily abstracted to be taught in educational institutions. The learning process entails investment in “who you are” and requires, according to Du Gay (1996), a strong sense of self-efficacy and metacognitive strategies that are applied in the constant production of self at work. This is a highly agentic process in which organisational bounds are negotiated towards outcomes that have an element of co-production. As well as contributing to the individual’s own development, these negotiations often collectively reproduce and reconstitute industry norms.

The nature of freelance work leads to particular kinds of identifications with the profession, where these workers are constantly reproducing themselves as an economic resource. Identification with their craft is foremost. In the film and TV industry, the freelancer identifies with the craft or camera work or sound, for example. Second, the practitioners identify with the entrepreneurship of freelance

work. In order to cope with the uncertainties of the work environment, freelancers report a range of dispositions, working ethics and tacit competencies, in addition to sector-specific technical knowledge and expertise that play a part in mitigating risk and making working life viable. The Singapore-based research team (Bound et al. 2015) has developed the concept of integrated practice to capture these multiple identifications with the craft, with entrepreneurialism and capacities to learn. These are dimensions of integrated practice, not separate sets of skills and dispositions. Craft, entrepreneurialism and capacities to learn are combined as a cohesive, coordinated set of actions and activities. “It is not the technical skills alone that makes a crafts person, or even the mastery and identification, but their combination with entrepreneurialism that generates the learning to learn and provides its material” p.12. These insights have salience internationally and implications for design and delivery of continuous professional development and higher education programmes.

Integrated practice places the agency of the freelancer at the heart while keeping in view the multiple ways in which the expression of agency is bounded as workers negotiate their working landscape. The agentic freelancer has to negotiate the affordances of the profession as well as those of the particular workplaces to which they are attached. These affordances vary in the ways they can limit, set free or otherwise influence the expressions of agency of the freelance worker engaged in integrated practice. Four categories of occupational affordances are identified by Bound et al. (2015) as significant: work, linkages, occupational community platforms and voice. Work affordances that support the development of integrated practice make available opportunities for specialisation and quality assignments that can stretch and challenge capabilities. The category of “linkages” focuses on ease of entry and movement across subsectors of the industry (e.g. stage companies, touring shows, hotels and convention centres). Linkages across job roles are also important potential facilitators as are professional networks. Networks can operate in ways that are excluded, competitively, in which case linkages become potential barriers that the agentic freelancer has additionally to navigate in pursuit of integrated practice. Occupational community platforms, the third category, can provide access to experts, networks and quality assignments through associations and non-profit organisations. The final category of “voice” refers to organisational representation, the extent to which the interests of freelancers are represented organisationally through professional associations, unions or other bodies representative of freelance worker interests.

As freelance work and other forms of self-employment are increasing, so too does the significance of political channels for the advocacy of better support for these forms of work through the welfare and pension systems and social policies. The Royal Society of Arts project investigating self-employment in the UK has proposed a “minimising risks” approach which emphasises spreading risks through collective action, whereby individual responsibility on the individual to minimising their own risks through continuous personal and professional development has to be matched by a new tax and welfare settlement, including the extension of tax relief on training (RSA 2014). These systemic and occupational affordances are increasingly critical

as the extent of freelance or self-employed work increases in developed economies. What freelancers make of these affordances is also critical – a co-production occurs as they exercise abilities to read situations, make judgements and take effective action. The scope of this co-production process extends from the micro level in practices to meso-level frameworks that frame and set limits on action.

This research has shown that freelancers in the creative industries speak well of continuing professional development opportunities only in so far as they support entrepreneurialism as well as the craft aspects. Given the demands of freelance work, the findings indicate that programmes of higher professional development are more likely to be taken up if perceived to have value in terms of these aspects of integrated practice. For the platform of provided opportunities to become a springboard for agentic development for the working freelancer, development opportunities have to be decentred and distributed, supported by quality mentoring, with a focus on knowledgeable practice. Developing a strong sense of the nature of the craft with agentic dispositions and metacognitive strategies is central, but many issues for the freelance worker are bigger than and beyond the control of the individual. These include employment practices in agency work that can undermine quality and skills development in the industry. The freelancers' needs to develop business management skills, including contract management skills, have been established, but this should not draw attention away from requirements for improvement in established industry practices. Professional associations can take the lead in representing the collective interests of freelancers in these matters, which are fundamental to a continuous supply of work and therefore of income.

2.8 Discussion

The cases above have illustrated the scope for learning through agentic action in contrasting fields of professional practice. Nursing exemplifies a regulated professional context, and film and TV represent the contingent contexts of freelance work. In both examples, professional learning and development is directed by a sense of what one is striving to “become” and the drive for feelings of competence and control in the present moment (see Table 2.1).

Exploring the processes that underpin the directing of work in these two fields has opened up new perspectives on the bounds of agency in professional practice. Agency is expressed in the processes of negotiation of the activities and relationships of professional practice, throughout working life. Agency is bounded in the negotiation of the organisationally and structurally embedded limits and possibilities of the particular employment relationship. The reflexive processes of structuration involved in negotiating the requirements and expectations of a regulated profession in a hospital trust differ profoundly from the constant reinventions of the self that characterise the freelancers' pursuit of contract-based work. Further sources of variation come from the input of practitioners themselves as they put knowledge to work, as well as from wider professional affordances and societal forces. And

Table 2.1 Sources of variation in bounded agency at work in contrasting occupational fields

	Nursing (hospital)	Film and TV
Context	Regulated professional and institutional	Contingent context of freelance work
Expressions of agency	Negotiating requirements and expectations of profession and hospital trust	Continuous reinvention of self as economic resource
Identifications	Becoming “a good nurse”	A craftsperson first; entrepreneur second
Process of “becoming” a good practitioner emphasises	<ul style="list-style-type: none"> • Learning by trial and error, from difficult experiences, from patients and peers; by “muddling through” • Supportive environments and relationships for the above 	<ul style="list-style-type: none"> • Learning by mimicry and synthesis • Metacognitive strategies – learning to learn • Supportive networks and relationships for the above
Knowledge “put to work” examples	<ul style="list-style-type: none"> • Recognising situations as requiring a response and bringing situations under control, under pressure • Exercising good judgement • Knowing how and when to be able to delegate, effectively and safely, and when to call in specialist help 	<ul style="list-style-type: none"> • Co-production • Knowing how to navigate “the working landscape” of multiple contractors • Coordination of craft, entrepreneurial and metacognitive capabilities in “Integrated Practice” (Bound et al. 2015)
Affordances depend on	Supervision; mentorship; work intensity	Networks, who you know; quality of assignments; management of downtime; access to resources

both settings have affordances that produce both socially reproductive and potentially transformative learning.

Studying agency empirically from the perspective of bounded agency developed in this chapter entails an ethnographic approach, combined with integrated analyses that keep the social processes that bind human agency, together with their interdependencies, in view. Contexts are not “backdrops” for agency but constitutive of agency. The organisation, work team or individual can be taken as the point of departure. Furthermore, each individual’s personal history can be considered a platform for their coming to know and make sense of what is encountered in workplaces and in their wider professional lives. This sense-making process both shapes and reflects the person’s intentionality and agency in the ways in which they engage with work roles, as shown by Billett (2006). Analyses of how individuals engage with the affordances of work – what work offers them and can do for them – show that the distribution of affordances is far from benign and is associated with the occupational hierarchies that operate with different degrees of visibility in organisations.

It was noted, in the examples of professions, that affordances are interconnected in a wider social ecology in which the agency of the acting individual has uncertain outcomes. Four categories of *actors, relationships, environments and structures, and*

processes lie at the heart of social ecological analyses (Weaver-Hightower 2008). Because ecologies are self-sustaining through interdependencies that operate without centralized controls, individuals and groups have spaces in which to exercise agency in ways that can influence the whole dynamic. More recently, in the context of life course research, Biesta and Tedder (2007) argue that people do not act *in* structures and environments – they act through them. This resonates with conceptualisations of agency as bounded rather than structured. People’s beliefs in their ability to change their situation by their own efforts, individually or collectively, are significant for their professional learning and development. These beliefs develop over time and according to experiences in working environments and beyond. They do not necessarily conform to societal norms and expectations, as the agentic action of people who sustain gender atypical choices in vocational education and training shows (Evans 2006). The ability to translate these agentic beliefs into action is achieved rather than possessed (Biesta and Tedder 2007), and capabilities are limited by bounds that can be loosened (Evans 2002, 2007). These perspectives recognise, for example, that professional workers can use the workplace as a learning space for ends that extend far beyond the organisation. It is also important to avoid assumptions about the straightforward dissemination of, for example, particular workforce development policies but instead explore their contestation, selective appropriation and interpretation by members of workforce to whom they are meant to apply (De Certeau 1984; Waite et al. 2014). In professional learning and development, practitioners are generally disposed to learn new capabilities that coincide with their own workplace and wider life goals, as Palesy and Billett (2017, this volume) note. Yet agency is bounded in occupational fields that are highly differentiated as domains for agentic expression, not least because of fundamental differences in the knowledge frameworks that underpin the directing of work and the ways in which judgement is exercised in evaluating the scope and limits of agentic action.

The development that takes place through the exercise of human agency is not that of the self-propelled autonomous individual but, rather, relational, historically embedded and biographically produced. It is as representative of the distal effects of socioeconomic and occupational structures as it is reflective of individual capabilities and the proximal influences of workplace, family and community. What binds us also contains affordances that enable us to think, feel and act. In forging connections between conceptions of agency as bounded, and the sense people have of self-authorship and capacities for self-direction in professional life, this chapter has aimed to open up an interdisciplinary space for new dialogic endeavours between communities of thought and practice in the field of adult learning.

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Chapter 3

Intrapreneurship Competence as a Manifestation of Work Agency: A Systematic Literature Review

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3.1 Introduction: The Relevance of Intrapreneurship Competence in Today's Working Life

Innovations are key factors for companies' survival, economic growth, employment, and social welfare (BMW [2014](#)). In times of globalisation and economic crises, as well as dynamic and therefore uncertain business environments characterised by rapid technological change, innovative products and services are critical to companies' competitive advantage (Borza and Maier [2012](#)). Nowadays, companies compete with each other not simply on the basis of minimising costs but, in particular, on the basis of innovations (Weber et al. [2016a](#)). The outlined developments affect the necessity of intrapreneurship (IP), especially in high-technology new ventures (Hayton [2005](#)). The urgency of creating innovations is intensified by the fact that the life cycles of products, services, and business models shorten with time (Trott [2012](#)) and the half-life of relevant knowledge decreases continuously. The outstanding role of innovations results in modified job profiles characterised by new skills employees are required to possess (Humburg and van der Velden [2014](#); Wunderer [1999](#)). Due to these changes, work processes are shaped more and more by project work, whereas manual routine work is increasingly displaced (Mayer and Solga [2008](#)). Abilities needed to successfully participate within our global knowledge society – demanding a highly skilled labour force – are called 21st century skills (Binkley et al. [2012](#)).

In response to the above-mentioned workplace changes and their consequences, intrapreneurship is reflected in the mission statements of many companies and even

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integrated into dual apprenticeship programmes (Weber et al. 2016a). From an organisational perspective, the development of IP within institutions is influenced by factors assigned to the corporate environment (macro level) as well as by factors originating from the company itself (micro level). Apart from these top-down processes, intrapreneurship is remarkably shaped by bottom-up processes, i.e. by the behaviour of the individual employee who is considered to be an “out-of-the-box thinker” (Moriano et al. 2014) and an innovation driver. The bottom-up view, which emphasises the paramount role of individuals in contributing to corporate success, underlies the present study. It is described as individual perspective on intrapreneurship (Heinonen and Toivonen 2007; Pinchot 1985).

So far, to our knowledge, no studies exist which provide an overview of the existing research landscape on the individual level of intrapreneurship.¹ Whereas entrepreneurship already accounts for an extended field of research in economic sciences, intrapreneurship – which is closely related to entrepreneurship – has become of particular interest to researchers within the last decades. Intrapreneurship is a concept indicating that entrepreneurial competencies are beneficial in any work context (Boon et al. 2013). The labour market shows an increased interest in an entrepreneurially oriented workforce, the so-called intrapreneurs. The professional competence of intrapreneurship – the creative and innovative entrepreneurial thinking and acting ability of employees (Weber et al. 2016a) – constitutes an important twenty-first century skill (Binkley et al. 2012; Di Fabio 2014). In accordance with Oser and Bauder (2013), professional contexts – which are focused on in our study – are characterised by professional actors, who distinguish themselves by four elements: they (a) are entitled to defined activities, (b) are accountable, (c) have to be available, and (d) are integrated into a professional community. These elements differentiate professional competences from simply acting within a leisure context.

Hence, we construe intrapreneurship competence as a construct which is directed towards individuals’ innovative work behaviour (see Messmann and Mulder 2017, this volume; Messmann and Mulder 2012) with regard to the recognition of opportunities for improvements, the generation of innovative project ideas, and the championing and implementation of such projects within the organisational practice (Perlman et al. 1988; Pinchot 1985; Veenendaal and Bondarouk 2015). Identifying and implementing new opportunities represent a crucial precondition for companies’ sustained superior performance. Intrapreneurship and innovative work behaviour are two comparable concepts originating from different disciplines: whereas intrapreneurship is an established concept within the business discipline, innovative work behaviour is derived from the field of workplace learning.

In view of the concept of “work agency” (e.g. Eteläpelto et al. 2013; Harteis and Goller 2014), it is demanded from individuals that they actively take care of their employability (Boon et al. 2013). This includes the exploitation of learning opportunities for proactive acting, such as creating innovative ideas or making reasoned decisions, which is typical for intrapreneurs (Weber et al. 2014). In terms of human

¹By providing an overview of the state of the art regarding antecedents and consequences of firm-level entrepreneurship, Zahra et al. (1999) focus on the organisational perspective on IP.

agency in professional practices, this “self-capital” of employees is used, e.g. for initiating and realising innovative entrepreneurial endeavours (IP projects). It is supposed to increase the success of the company within which the individual is employed, as well as the employee’s work satisfaction (Eteläpelto et al. 2013). In this context, di Fabio (2014) defines “intrapreneurial self-capital” as a “core of individual intrapreneurial resources used to cope with career and life construction challenges”.

To reach the goal of encouraging employees’ IP behaviour, it is indispensable to obtain some insight into the individual’s intrapreneurial dispositions (Hayton and Kelley 2006). Furthermore, an empirical estimation of individuals’ potential for innovative behaviour in organisational practice is only possible if a valid modelling of IP competence exists. This is necessary as a basis for an aligned definition of curricular goals and for initiating goal-oriented learning opportunities, as well as corresponding evaluation procedures (see the “curriculum-instruction-assessment triad” of Pellegrino 2010, pp. 4–5). For conceptualising and modelling IP competence in the sense of human agency in work context (see Goller and Harteis 2017, this volume), we have included a systematic literature review in order to identify the central dispositions constituting IP competence.² Therefore, we have focused on studies that address IP competences as crucial drivers for the success of companies and individuals. Thus, our study pursues two main objectives: (a) to outline the major findings concerning the facets of knowledge, skills, and attitudes (KSA) that have been identified as being characteristic for mastering typical IP challenges and (b) to consolidate these findings within a competence model for intrapreneurship that is derived from the identified dispositions.

3.2 Theoretical Background and Research Questions

3.2.1 Exploring the Concept of Intrapreneurship

Intrapreneurship has many faces. Apart from numerous definitions and terms used for the phenomenon of *intrapreneurship* and the *intrapreneur*, various observation levels, as well as different outcomes characterising this concept, exist (Draeger-Ernst 2003; Süssmuth Dyckerhoff 1995). For example, the expressions “corporate entrepreneur” and “innovation manager” are used as synonyms for the term “intrapreneur”. Instead of “intrapreneurship” or “corporate entrepreneurship”, occasionally, the terms “firm-level entrepreneurship”, “venture entrepreneurship”, and “internal

²“Innovative behaviour” is an introduced concept within scientific literature, which expresses what we understand as “IP competence”. It is an established concept also used within the discipline of economy and business. Therefore, within our chapter the concepts “behaviour” and “competence” are used synonymously. However, it has to be mentioned that in other contexts, the precise differentiation between “behaviour” and “competence” is highly relevant as explicated within Goller and Harteis (2017, this volume).

Table 3.1 Main approaches for investigating IP

Organisation-oriented approach	Individual-oriented approach
Micro (internal) contextual factors, e.g.: <ul style="list-style-type: none"> • Company culture • Organisational architecture • Management style and support 	Individual dispositions of IP competence: <ul style="list-style-type: none"> • Knowledge • Skills • Attitudes
Macro (external) contextual factors, e.g.: <ul style="list-style-type: none"> • Industrial/market environment • Technological environment • Social environment 	

entrepreneurship” are found within scientific literature.³ However, the latter four concepts are usually not associated with the intrapreneur as an individual. They are primarily related to the company level which deals with establishing new business divisions. The keyword intrapreneurship on the individual level was shaped for the first time by Pinchot (1985).

Investigating IP from different observation levels, authors have outlined two overarching research streams (Korunka et al. 2009; Pearce et al. 1997) (cf., Table 3.1). Following the (a) *organisation-oriented* view brings significant attention to the impact of internal and external contextual factors that stimulate or inhibit IP endeavours of institutions. Internal conditions – also called micro contextual factors – look at the internal environment of an enterprise, for instance, a company’s culture, organisational architecture, or management style and support (Antonicic and Hisrich 2001; Holt et al. 2007; Hornsby et al. 2002; Ireland et al. 2009; Kantur and İşeri-Say 2013). External conditions – also called macro contextual factors – apply to the external environment of an institution. They comprise the industrial/market environment, the technological environment, and the social environment (Antonicic and Hisrich 2001; Badguerahanian and Abetti 1995; Molina and Callahan 2009; Zahra and Covin 1995). In contrast the (b) *individual-oriented* approach means taking a behavioural perspective on IP. Here, the personality of an individual, including his/her knowledge, skills, and attitudes that allow for a creative and innovative entrepreneurial way of thinking and acting, is focused on (Ebner et al. 2008). Manifold views on IP refer to the number of employees who are adjudged to have the potential to become intrapreneurs (Draeger-Ernst 2003). According to elitist approaches, only successful managers or selected employees of a high hierarchical status within the respective institution – the, so-called, business elites – are perceived to be able to function as intrapreneurs (e.g. Cox and Jennings 1995; Steinle and Draeger 2002). By contrast, the collective approach (Pinchot 1985; Wunderer 1999) claims that ordinary employees who show innovative behaviour patterns are also able to become intrapreneurs.

³For a more detailed description of differences in the terminology regarding the concept of IP, see Sharma and Chrisman (1999); for a differentiation between intra- (using internal resources for increasing company performance) and exo-preneurship (using external resources, such as strategic alliances or franchising, for increasing company performance), see Chang (2001).

With regard to the different outcomes of IP, varying degrees of innovation are distinguished. According to the scientific business literature, an incremental and a radical IP orientation is differentiated (Draeger-Ernst 2003; Wunderer and Bruch 2000): *incremental IP activities* refer to continuous innovations. These comprise the enhancement of already existing products, services, and processes that are realisable within prevailing organisational structures. A typical example for an incremental innovation is the addition of a specific feature to an existing product. *Radical IP activities* are related to discontinuous innovations. They are not connected to existing products, services, and processes. Compared to incremental IP activities, they occur more seldom and are not achievable within the available capacities of an institution. A typical example for a radical innovation is the launch of a completely new product onto the market.

3.2.2 *Conceptualisation of Intrapreneurship Competence for Its Examination as Work Agency*

Pinchot (1985) characterises the intrapreneur as an innovatively behaving individual who acts like an entrepreneur, however, in the role of an employee within an organisation – no matter the hierarchical level. It is this concept of IP which we follow, a concept that is also outlined by Perlman et al. (1988) stating that “Intrapreneurship is a process by which a person meets his or her needs for autonomy, invention, management, and completion of projects in a complex bureaucracy. It is a process by which new ventures, products, and projects are developed and implemented in [...] organizations” (p. 14) (see also Antoncic and Hisrich 2001). Typical situational challenges which an intrapreneur has to master are, for instance, “the development of new products, services, technologies, administrative techniques, strategies, and competitive postures” (Antoncic and Hisrich 2001, p. 498). The IP endeavour leads at least to an incremental innovative outcome (Draeger-Ernst 2003).

In view of the discussion about modelling and measuring competencies (e.g. Baethge et al. 2006), we model IP as a competence following a holistic idea of competence. This means that certain underlying dispositions as well as a realised performance (in sense of innovative behaviour) are relevant for coping with crucial IP challenges. Hence, we see our understanding consistent with the competence concept suggested by Blömeke et al. (2015), who focus on “the latent cognitive and affective-motivational underpinning of domain-specific performance in varying situations” (p. 3), as well as with Weinert’s (2001) concept that addresses cognitive, motivational, ethical, volitional, and social dispositions which are relevant to master complex situations in a specific domain. Binkley et al. (2012) describe the differentiation between the cognitive knowledge and skills components and the noncognitive attitude components within their KSAVE (knowledge, skills, attitudes, values, and ethics) framework for defining 21st century skills outlined within Sect. 3.2.3. In

accordance with Weinert's (2001) approach, we do not view IP competencies as stable traits but, rather, as malleable aspects of human behaviour that can change in response to educational interventions (National Research Council 2012). Ergo, teaching and learning processes are required in order to (further) develop IP competence (Bjornali and Støren 2012; Hornsby and Goldsby 2009; Thornberry 2003).

IP competence seems to have – at least to our understanding – a great overlap with the conceptualisation of “work agency” in accordance with Eteläpelto et al. (2013). They define “work agency” as a “subject-centred sociocultural” (p. 47) concept focusing on “creativity”, “autonomy”, and “self-fulfilment”, as well as “acting as a force for change”. Besides, it is supposed to encompass “suggestions for developing existing work practices” (p. 46) but also to exercise resistance and reforms within the organisation.

3.2.3 *The KSAVE Framework for Defining 21st Century Skills*

Within the KSAVE model for developing and measuring 21st century skills, ten superordinate skills were defined by Binkley et al. (2012) as standards for general and vocational education. IP competence largely addresses the first of these KSAVE skills, “Creativity and innovation”. In the KSAVE concept, the (a) *category* “*knowledge*” comprises all dispositions which are characterised by specific knowledge and understanding requirements concerning different elements of a domain. With regard to IP competence, this includes, for instance, knowing a wide range of creativity techniques (such as mind mapping) which serve to structure one's ideas. The (b) “*skills*” *category* describes the developed abilities of effectively performing actions, for example, the abilities to develop, implement, and communicate new project ideas to others. The elements in the (c) *category* of “*attitudes, values, and ethics*” influence the volition, the motivation, and the commitment to perform certain actions. This involves, for instance, an intrapreneur to be open to new ideas.

3.2.4 *Research Questions*

The aim of our comprehensive literature review is to identify the “big idea” (Pellegrino 2010) with regard to the central dispositions (KSA) of IP competence – as a “manifestation” of work agency – required for mastering typical domain-specific workplace situations. The results serve to create a theory-based IP competence model which can be used in continuing work and projects as a valid basis for defining curricular goals, instructional means, and evaluation strategies. Thus, we address the following two research questions (RQs):

RQ1 *Investigating intrapreneurship dispositions*: Which empirically examined dispositions – knowledge, skills, and attitudes – can be identified as characteristic for mastering typical intrapreneurial challenges?

RQ2 *Modelling intrapreneurship competence*: How can a competence model for intrapreneurship be derived from the dispositions identified within our literature review?

3.3 Methods

3.3.1 *Categories and Terms for Searching the Relevant Literature*

For answering RQ1 we ran a systematic and well-structured literature search. The methodological procedures used follow the guidelines for literature reviews suggested by Cooper (2006). To capture a vast body of publications that could be of interest in providing a comprehensive analysis of the literature on IP dispositions, three search categories were defined, and relevant search terms were assigned to them for generating an appropriate Boolean search algorithm: (a) *intrapreneurship* comprising, apart from the terms “intrapreneur” and “intrapreneurship”, the synonyms commonly used for these expressions; (b) *behaviour* listing the relevant keywords expressing behaviour related to IP/innovative project work⁴; and (c) *success* covering terms for the organisational and personal criteria of success.

3.3.2 *Databases and Selection Criteria for Generating the Sample*

The database selection for performing the literature search was guided by the database information system (DBIS) offered by Ludwig-Maximilian University in Munich. Literature included in the DBIS is required to meet high-quality standards. From the disciplines of interest, seven top-ranking databases were chosen: these were “Academic Search Complete” as an interdisciplinary database; “Business Source Complete” and “EconLit” for the field of business; “PsycINFO”, “PSYINDEX”, and “PsycARTICLES” for the field of psychology; and “ERIC” for the field of pedagogy. All these databases were accessed through the superordinate database EBSCO. The identification of relevant literature was based on the following criteria: (a) one or more keywords from each of the three search categories

⁴Expressions directly containing the terms “innovative project work/management” were not included as separate search terms because an immense quota of hits reflecting the general field of management – not part of this study – would result.

Table 3.2 Number of articles assigned to the three lists

Type of list	<i>n</i>
Long list (via EBSCO)	472
Medium list (via EBSCO)	197
+ manual search via VHB-Jourqual and HR journal articles	41
Extended medium list	238
Short list	78

outlined above appear within the article title and/or subject terms; (b) to ensure the scientific quality of the search results, only scholarly peer-reviewed journals are included; (c) publication took place between 1985 and 2015, inclusive, as the topic of IP gained special interest in 1985 when Pinchot shaped the term “intrapreneur”; and (d) only articles in the English and German languages are considered. The data collection resulted in a long list of $N = 472$ ($N = 498$ unadjusted with regard to duplicates) articles. Articles that were not of thematic relevance – for instance, not referring to IP at all, but to entrepreneurship exclusively (such as Hyytinen and Maliranta 2008; Jensen and Luthans 2006) – were eliminated from this list. This procedure led to a list of 197 articles (medium list).

To ensure a comprehensive depiction of the state of the art concerning the literature of interest, the search was extended to a manual screening of $N = 66$ journals listed in the VHB-Jourqual ranking (version 3)⁵ while applying the same criteria as presented above. Additionally, $N = 55$ journals from the field of human resources were browsed.⁶ A total of $N = 41$ relevant publications were reached by this supplementary search and added to the medium list ($N = 238$). Finally, a short list comprising $N = 78$ publications was created through eliminating all articles that exclusively dealt with the organisational level and which did not run empirical studies as we wanted to learn about the empirical relation between examined dispositions and successful IP behaviour. The theoretical and more conceptual papers and articles were investigated within our first step of defining and describing the concept of IP (e.g. using the work of Pinchot 1985; Draeger-Ernst 2003). The subsequent table summarises the process of generating the short list that resulted from our literature search (Table 3.2).

The empirical publications contained on the short list ($n = 78$) constitute the basis for answering the two research questions. As qualitative and mixed methods articles often allow deeper insights into the investigated phenomenon than quantitative studies, they were included in our analysis. Table 3.3 presents the composition of the final sample.

⁵The VHB-Jourqual ranking is regarded as a substantial measure for evaluating journals belonging to the field of business sciences. It is edited by the German Academic Association for Business Research (Schrader and Hennig-Thurau 2009).

⁶For identifying the relevant journals, the publication lists of the German chairs for human resource education and management were considered.

Table 3.3 Distribution of the studies on the short list ($n = 78$) regarding research method, sample size, and target group

Research method	Overall count n (%) of studies	Sample size	Target group of investigation – number of studies			
			Employees	Managers/ entrepreneurs	Employees and managers/ entrepreneurs	University/ high-school students or apprentices
Quantitative	72 (92.31%)	[56;339,071]	39	13	16	4
Qualitative	3 (3.85%)	[12;45]	0	1	2	0
Mixed	3 (3.85%)	[4;100]	1	2	0	0

Note: $n = 2$ of the quantitative studies use data from the Global Entrepreneurship Monitor and do not specify the target group

3.3.3 Coding the Relevant Articles

The coding of the identified publications followed the guidelines of a deductive qualitative content analysis (Mayring 2010). In order to answer research question 1, the dispositions identified within the short list studies ($n = 78$) were assigned to the following three categories of the KSAVE (knowledge, skills, attitudes, values, and ethics) framework for conceptualising 21st century skills by Binkley et al. (2012): (a) *knowledge*, (b) *skills*, and (c) *attitudes* (including values and ethics). To ensure reliability, the first twenty papers were coded by two independent raters who had participated in a comprehensive training on the detailed coding guidelines. Afterwards, any deviations in the coding process were discussed and resolved. Following this, the two raters continued to analyse the remaining studies. An inter-rater reliability Kappa of .88 was attained for the coded articles. According to Fleiss and Cohen (1973), this accounts for a high level of agreement.

3.4 Results and Discussion

3.4.1 Investigating IP Dispositions Relevant for Innovative Behaviour – RQ1

Within Table 3.4 dispositions that are identified within the analysed empirical studies as relevant for applying successful innovative behaviour are displayed. They are assigned to the competence-based categories “knowledge”, “skills”, and “attitudes” of the KSAVE framework.

Table 3.4 Identified dispositions assigned to the competence-based categories “knowledge”, “skills”, and “attitudes” in relation to successful innovative behaviour

	Disposition ^a	Positive relation	No relation	Negative relation
1. Knowledge	Specialist Knowledge	Ebn 2008; Kor 2009		
	Specifying limitations	Boo 2013		
	Entrepreneurial competencies and experience	Dav 1999; Urb 2013a	Dou 2013	
2. Skills	<i>Proactiveness</i>	Boo 2013; DaCosta 2011; Jai 2012a; Jai 2012b; Odo 2014; Zhu 2014		
	<i>Goal-achieving behaviour</i>	Dav 1999; Sin 2013		
	<i>Autonomous activity</i>	Ebn 2008; Kor 2009		
	Recognising opportunities	Mar 2013; Urb 2013a; Urb 2013b		
	Context sensitivity	Sin 2013		
	<i>Creativeness</i>	Bjo 2012; Car 2012; Dav 1999; Sin 2013; Zhu 2014		
	<i>Innovativeness</i>	Boo 2013; Ebn 2008; Jai 2012a; Jai 2012b; Kor 2009; Rig 2013		
	Unconventional thinking	Dav 1999		
	Visionary thinking	Dav 1999		
	Competencies related to productivity and efficiency		Bjo 2012	
	Self-monitoring behaviour	Car 2012		
	Self-calculating behaviour		Sin 2013	
	Analytical thinking	Bjo 2012		
	<i>Brokering competencies</i>	Bjo 2012		
	Intuitive problem-solving	DavDavis 1999	Sco 1994	
	Systematic problem-solving			Sco 1994
	Social competencies	Avk 2000; Ebn 2008; Kor 2009; Rah 2009		
	<i>Assertiveness</i>	Dav 1999; Mül 2002; Ebn 2008; Kor 2009	Mül 2002	

(continued)

Table 3.4 (continued)

	Disposition ^a	Positive relation	No relation	Negative relation
	Agreeableness		Hol 2007; Sin 2013	
	Team competence	Ebn 2008; Kor 2009		
	Leadership competencies	Ebn 2008; Kor 2009		
	<i>Championing</i>	Bjo 2012		
	Commitment building	Boo 2013		
	Persistent behaviour	Car12; DaCosta 2011; Dav 1999		
	Inspiring others	DavDavis 1999		
	Communicativeness	Bjo 2012		
	Emotional intelligence and empathetic behaviour	Avk 2000; Rah 2009; Yuv 2007; Zam 2009		
3. Attitudes	Risk-taking propensity	Boo 2013; Car 2012; Fin 2012; Jai 2012a; Jai 2012b; Mül 2002	Han 2009; Hea 2009; Mar 2013; Rig 2013; Urb 2013b	Boo 2013; Dou 2013; Mül 2002
	Extraversion		Hol 2007; Sin 2013	
	Openness	Mad 2014	Hol 2007; Sin 2013	
	Versatility	Dav 1999	Sin 2013	
	Entrepreneurial intention	Dav 1999; Urb 2013a		
	Achievement motivation	Ebn 2008; Jai 2012a; Jai 2012b; Jai 2012c; Kor 2009; Mül 2002		
	Personal initiative	Ebn 2008; Hea 2009; Kor 2009; RigR 2013		
	Conscientiousness		Hol 2007; Sin 2013	
	Resilience	Car12; Dav 1999		
	Ambition	Dav 1999		
	Enthusiasm	Ary 2012; Cox 1995; Dav 1999; Kla 2013		
	Self-efficacy	Dou 2013; Fin 2012; Glo 2014; Jai 2012a; Jai 2012b; Rut 2007		
	Internal locus of control	DaCosta 2011; Jai 2012a; Jai 2012b; Mül 2002		
	Optimism	Car12; Rut 2007		
	Income orientation		Dou 2013; Mar 2013; Sin 2013	
	Altruism		Sin 2013	

Note: ^aThe dispositions written in italics refer to elements that are explicitly part of the work agency concept according to Eteläpelto et al. (2013)

3.4.1.1 Intrapreneurship Dispositions Assigned to the “Knowledge” Category

Specialist knowledge describes knowledge which is related to a specific profession. In the research of Ebner et al. (2008), as well as Korunka et al. (2009), it is identified as central disposition for intrapreneurial behaviour. It has to be noted that such essential content-related knowledge varies depending on the respective domain (e.g. business versus engineering domain). Hence, it cannot be analysed in general but only within the context of the particular study. By conducting interviews with employees and employers engaged in the educational sector, Boon et al. (2013) made clear that intrapreneurs have to know how to *specify limitations* (i.e. to be aware of constraints). According to Boon et al. (2013), this disposition refers not only to organisational limitations (e.g. bureaucracy) but also to social (e.g. lack of commitment) and personal (e.g. lack of realism) limitations. It includes, for example, knowledge concerning the technique of SWOT (strengths, weaknesses, opportunities, and threats) analyses but also knowledge in terms of the management of domain-specific disturbances and the realistic estimation of situation-related risks, which may occur unexpectedly during an intrapreneurship project.

Through intrapreneurship, new ideas – for example, new products – are developed. *Entrepreneurial competencies* (i.e. competencies to create an innovative idea from the scratch but also through pursuing new business initiatives in the face of uncertainty) and *entrepreneurial experience* (i.e. the past activity of establishing an innovative project) are assumed to be a crucial prerequisite for the success of intrapreneurs. Urbano et al. (2013) recognised a positive relationship between entrepreneurial competencies and intrapreneurial performance. Entrepreneurial experience also shows a positive effect (Davis 1999). Consequently, knowledge about how to develop and implement new ideas – e.g. knowledge concerning the mind mapping technique, the rationales of a Gantt chart, or domain-specific terms, techniques, and software tools – is not only helpful for the successful planning and implementation of an entrepreneur’s idea but also for the successful realisation of the intrapreneur’s work within his/her organisation. However, there is mixed evidence concerning previous self-employment and the related amount of acquired entrepreneurial behaviour: Douglas and Fitzsimmons (2013) were unable to confirm a significant effect; Davis (1999) and (Urbano et al. 2013) found a significant positive effect.

3.4.1.2 Intrapreneurship Dispositions Assigned to the “Skills” Category

Pinchot (1985) differentiated between two dimensions of the intrapreneurial process – (a) the development of new ideas and (b) the implementation of these ideas within the respective institution. In accordance with his theory, the extracted skills were assigned either to one of these two IP dimensions or to an overall category which encompassed both dimensions:

3.4.1.2.1 Skills Related to the Development and Implementation of New Ideas – Dimension 1 and 2

Intrapreneurially oriented employees are characterised by *proactiveness*, *goal-achieving behaviour*, and *autonomous activity* (e.g. Boon et al. 2013; Da Costa and Brettel 2011; Davis 1999; Ebner et al. 2008; Korunka et al. 2009; Sinha and Srivastava 2013). The development of these skills is highly relevant from a work agentic perspective on learning and development. They are essential during the complete intrapreneurship process, i.e. from the generation of a new idea to the implementation of this idea within organisational practice. *Proactiveness* accounts for searching actively for business opportunities and taking initiative for implementing recognised opportunities in order to be the first player to gain a competitive advantage. Job satisfaction and the associated motivation are supposed to have a moderating effect on proactive behaviour and, therefore, on IP. Potential intrapreneurs who are not engaged in one of their fields of interest are assumed to work less proactively due to a low motivational degree. *Goal-achieving behaviour* concerns the effort to achieve a certain objective by performing efficient actions (Davis 1999; Sinha and Srivastava 2013). The independent action by an employee which is directed to bringing forth new business ideas and to carrying these ideas through to a profitable completion is described as *autonomous activity* (Lumpkin and Dess 1996).

3.4.1.2.2 Skills Related to the Development of New Ideas – Dimension 1

A skill that is highly important for innovative behaviour is to *recognise opportunities* offered by the market (Martirena 2013; Urbano et al. 2013; Urbano and Turró 2013). The perception of chances and problems regarding potential IP projects, combined with strong *context sensitivity* (i.e. the ability to adapt orientations according to specific situations; Sinha and Srivastava 2013), constitute skills that are strongly demanded from employees. They enable employees to generate innovative ideas, which are highly relevant for companies in order to remain competitive. To attain this objective, also the skills of *creativity* and *innovativeness* (developing ideas concerning new products, services, and creative processes), as well as *unconventional (non-conformist)* and *visionary thinking*, are crucial dispositions. All mentioned skills show a positive relationship with intrapreneurial behaviour. It has to be noted that they are partially overlapping in terms of their concept domain.

3.4.1.2.3 Skills Related to the Implementation of New Ideas – Dimension 2

Self-monitoring behaviour is a metacognitive skill describing the competence of an individual to control his/her working progress. This monitoring behaviour could, for example, be directed to advances within an intrapreneurship project. According to Carmelo-Ordaz et al. (2012), it constitutes an important disposition for the

successful implementation of innovations within an institution. This includes keeping to a project schedule and reflecting on whether project sub-goals are met. Bjornali and Støren (2012) prove empirically that *analytical thinking* shows a positive relationship with employees' innovative activities. This skill is highly relevant for structuring and assessing project-relevant information and for evaluating project risks. Apart from *brokering competencies*, which refer to linking information and knowledge from different sources in order to create new opportunities (Bjornali and Støren 2012), *analytical thinking* serves for the allocation of resources corresponding to the project members' inherent skills. This contains, for instance, the arrangement of work packages to create a Gantt chart for an IP project. In their study on the driving factors of innovation in the workplace, Scott and Bruce (1994) show that the type of problem-solving style is of relevance. They examine the negative effect of *systematic problem-solving* on innovative behaviour. Such a *systematic problem-solving* style is reflected by individuals who stick to rigid patterns when coping with problems. By contrast, an *intuitive problem-solving* style is applied by individuals who develop original problem solutions based on the requirements of each particular case. It does not have a significant influence on innovative behaviour in the study by Scott and Bruce (1994). However, Davis (1999) confirmed the expected intuitive behaviour of intrapreneurs. An intrapreneur's rigid procedure for solving problems or for the discovery of innovations is hard to imagine. Intrapreneurs will choose the approach which is most suitable for mastering a specific situational challenge (Scott and Bruce 1994).

Ebner et al. (2008) outline three specific *social competencies*⁷ as crucial factors which influence IP behaviour. First, they examine *assertiveness*, which expresses the disposition to enforce one's own ideas beyond the company's prevailing tradition. Davis (1999) also characterises the intrapreneur as possessing a high degree of *assertiveness*. Besides, the results of Müller et al. (2002) show that the level of *assertiveness* required to enforce ideas against resistance from company members turns out to be higher for intrapreneurs compared to non-intrapreneurial employees. In terms of *assertiveness* being a crucial skill for IP behaviour, it is therefore not surprising that *agreeableness* is not considered to be one. The second social competence investigated by Ebner et al. (2008) is *team competence*. An optimal handling of internal social relationships is indispensable for intrapreneurs who are dependent on reliable project team work. A further essential determinant of intrapreneurial behaviour is *leadership competence*, which is defined as being the ability to *champion* one's own ideas in order to persuade others to accept them (Bjornali and Støren 2012). The activities of presenting and justifying IP projects in order to convince other team members also require *resilience* (i.e. the skill to deal with setbacks and rejection), *commitment building* (i.e. to win people over in order to work in a certain direction), *persistent behaviour* (i.e. *making tenacious efforts to overcome barriers and to reach set goals*), and the disposition to *inspire others* (i.e. to mobilise their capacities). All four skills show a positive relationship with an innovative employee's

⁷In the scientific literature, social competence is partly considered as one dimension of emotional intelligence (Goleman 1996).

performance (Boon et al. 2013; Carmelo-Ordaz et al. 2012; Da Costa and Brettel 2011; Davis 1999).

Further skills that are called upon with regard to an effective collaboration within a project team are *communicativeness* (Bjornali and Støren 2012) and *emotional intelligence* – such skills also showing a positive effect on intrapreneurial behaviour. *Emotional intelligence* deals not only with the skill “how we manage ourselves” but also with the skill “how we manage relationships” (Yuvaraj and Srivastava 2007). It focuses on the perception of one’s own and others’ emotions as well as the regulation and utilisation of these emotions (Zampetakis et al. 2009). Concerning successful teamwork, it is essential to control one’s own negative emotions so that they do not disturb the collaboration. Moreover, the skill to perceive, understand, and influence colleagues’ emotions constitutes a very important disposition (Goleman 1996). To make a project team work effectively, *empathy* is a necessary skill in order to recognise the emotional changes of team members, to comprehend the connection between their emotions and their behaviour, and to react adequately, for instance, by solving emotional conflicts diplomatically (Rahim and Marvel 2009). If one can effectively use these emotional skills, one is able to influence and direct the behaviour of colleagues without embarrassing them. However, emotional skills are not only valuable for motivating a team but also for convincing others of your IP ideas.

3.4.1.3 Intrapreneurship Dispositions Assigned to the “Attitudes” Category

IP research on *risk-taking propensity* – expressing how individuals behave in uncertain situations – led to some notable findings. The *willingness to engage in risky endeavours* is the attitude associated with the most varying results in the analysed empirical research. One reason for this could be the difficulty in measuring the influence of risk-taking propensity in a generally valid way. Besides, the majority of the studies restrict risk to financial risk in general. This constitutes only one single dimension of the risk construct and is primarily of relevance to entre- and intrapreneurs. Using meaningful samples, more differentiated risk facets should be investigated in prospective empirical studies that analyse the degree of intrapreneurs’ risk-taking propensity compared to other employees. Apart from an examination of the preference for choosing risky profit and growth opportunities, and the tendency to take calculated project risks despite the possibility of failure, dimensions such as the willingness to take career-related and reputational risks would also be interesting. This latter risk approach is mostly neglected in existing research. One exception is the study by Boon et al. (2013), which shows that reputational risks are very likely to be taken by employees with intrapreneurial qualities.

Urbano et al. (2013) identified the striking result that the *intention to become self-employed* within the next 3 years positively influences intrapreneurial behaviour. Possibly, IP serves as a first step towards setting up one’s own enterprise. As a consequence, companies should be alert and recognise such entrepreneurial intentions at an early stage in order to keep such employees from leaving the company

by using appropriate incentives. This finding also shows that initiatives for fostering IP – for example, courses in higher and vocational education – can partially be effective for entrepreneurship and vice versa.

All empirical studies on *achievement motivation* of intrapreneurs (e.g. Müller et al. 2002) confirm a positive effect on intrapreneurial behaviour. The degree of *achievement motivation* is defined as the endeavour to engage in tasks that are interesting and challenging, that offer intrinsic performance incentives, and that are expected to have a high probability of success (Korunka et al. 2009; Müller et al. 2002). The high *achievement orientation* identified for intrapreneurs constitutes a central driver for their innovative performance.

Self-efficacy is the belief of being able to influence external incidences by one's own abilities (Bandura 1997). *Internal locus of control* goes along with this concept and means an individual's belief that the emergence of an event depends on the behaviour of a person, which does not have to be the individual him/herself (Müller et al. 2002). As presented in Table 3.4, various studies prove that *self-efficacy* and *internal locus of control* affirmatively affect intrapreneurial behaviour. If an employee is strongly convinced that a success can be achieved by himself/herself, a greater effort to implement project ideas is supposed to be made. The success of an employee's action can further increase this *self-efficacy* expectation. However, this is also true for the opposite: frequent failures can reduce *self-efficacy* expectations enormously (Jain and Ali 2012a). As a result, new projects are potentially not initiated because of a lack in self-efficacy expectation. By supporting employees' IP initiatives from the suggestion of new ideas until the reflection of the implemented IP project, their *self-efficacy* can be increased. Just being *extroverted* or *open minded* or even *conscientious* does not suffice for generating and implementing innovative ideas (Holt et al. 2007; Sinha and Srivastava 2013). Rather a bundle of attitudes like *openness* for new and uncertain situations (Madrid et al. 2014); being *enthusiastic* (Aryee et al. 2012; Cox and Jennings 1995; Davis 1999; Klaukien et al. 2013), *ambitious* (Davis 1999), and *optimistic* (Carmelo-Ordaz et al. 2012; Rutherford and Holt 2007) about the new innovative idea; as well as a *versatility* stance (Davis 1999) are necessary to engage employees in innovative activities.

In contrast to entrepreneurs, no effect of *income orientation* (expressing an individual's tendency to desire greater income) on intrapreneurial behaviour was found by Douglas and Fitzsimmons (2013), Martiarena (2013), and Sinha and Srivastava (2013). Individuals who are highly income oriented are more likely to decide on a career as an entrepreneur (Martiarena 2013). This has to be considered in terms of remunerating intrapreneurs. To motivate them, neither a higher income appears necessarily to be an effective incentive (De Villiers-Scheepers 2011) nor an attitude of *altruism* (Sinha and Srivastava 2013).

The competence profile delivered in Table 3.4 indicates that IP is a very complex construct demanding a variety of dispositions. Many dispositions, respectively, KSA, have been found to be closely related to work agency – not just the three very overt overarching constructs *proactiveness*, *goal-achieving behaviour*, and *autonomous activity*. In the subsequent section, a model for IP competence will be derived from the separate identified dispositions.

3.4.2 Competence Model for Intrapreneurship – RQ2

3.4.2.1 Creating the Structural Competence Model for IP

Competence models currently used in evidence-based teaching and learning contexts follow the alignment between curriculum, instruction, and assessment (Pellegrino 2010). In international large-scale assessments, they comprise a *horizontal* and a *vertical layer*. The horizontal competence structure (width of the competence) shapes the *structural model* (Hartig and Klieme 2006). This *structural model* includes the domain-specific “dispositions”, “situation-specific skills” (which are supposed to require not only skill but also knowledge that is specific to the respective situations), and the “observable behavioural evidences”. For the vertical competence structure (depth of competence) – shaping the *proficiency level model* (Hartig and Klieme 2006) – various competence profiles are assumed. Through focusing on the particular degree of achievement (Hartig and Jude 2007; Blömeke et al. 2015), it provides information on the difficulty level of situational challenges and reflects the different proficiency levels of the particular construct. Based on the results of our literature review presented in Sect. 3.4.1, our focus here is on the *structural model*. The level model has to be adjusted to the particular addressees when it gets implemented into a continuing research endeavour.

For creating the *structural IP competence model*, the dispositions extracted from the literature review are first modelled as “IP competence facets”, second, further operationalised as “situation-specific skills”, and finally formulated as “observable behaviour/evidence” patterns which a student has to bring forward in order to confirm that he/she has acquired the particular “situation-specific skill”, concerning the particular “IP competence facet” under investigation (Pellegrino 2010; Pellegrino et al. 2014). Using this modelling procedure, the structural model follows the idea of an evidentiary argument, meaning “an argument from what we observe students say, do, or make in a few particular circumstances to inferences about what they know, can do, or have accomplished more generally” (Mislevy and Haertel 2006, p. 7).

In scientific literature IP/innovative work behaviour is often conceptualised as a two-stage process comprising a first stage of perceiving opportunities and chances, as well as developing new ideas, and a second stage of implementing new ideas within the respective institution (Amabile 1988; Oldham and Cummings 1996; Pinchot 1985; West 2002). Correspondingly, for the structural IP competence model, we assume the following two dimensions: (a) *idea generation* and (b) *planning and implementing*. Within the literature on IP project management, these two IP dimensions are further divided up into six phases (Kuster et al. 2011). Hence, we structured the manifold IP dispositions extracted within our literature review according to these six process phases. On the basis of this information, the six phases were then further operationalised into 14 situation-specific skills.

3.4.2.2 Integrating the Identified Dispositions into the Competence Model for IP

Guided by the described procedure, Table 3.5 connects the dispositions (listed in Table 3.4), with the six phases. The third column of Table 3.5 illustrates the “situation-specific IP skills” which were derived post hoc from the literature review’s results.

For the modelling procedure, we included those extracted dispositions that were positively related to a successful IP behaviour. Dispositions showing no or even a negative relation were not taken into account as there is no empirical evidence that they are linked to or effect a successful intrapreneurial performance. Furthermore, within our modelling of IP competence, we focus on knowledge and skills. Ergo, related to the construct of “human agency in work context”, so far our modelling of IP competence covers the component of “agency competence”, not the components of “agency beliefs” (like self-efficacy, achievement motivation, optimism) and “agency personality” (like personal initiative, internal locus of control, openness) (see Goller and Harteis 2017, this volume). The reason for stressing the cognitive IP dispositions within our modelling is not because we neglect attitudes or noncognitive dispositions but rather because very little research has been carried out on valid alternative methods for measuring attitudes (Sembill et al. 2013). Fleischer et al. (2013) therefore suggest measuring, at this current stage of research, noncognitive dispositions separately rather than using an integrated competence model. By running further additional structural equation models, an integrated model might be possible at a later stage. This strategy is in line with several research approaches of competence modelling and measurement (e.g. Klieme and Leutner 2006).

Based on the outlined considerations, we formulated observable evidences from which one can infer to the underlying latent IP competence construct. Hence, our theory- and evidence-based modelling of IP competence resulted in the subsequent conceptualisation (Table 3.6).

This model now can be used to formulate precise *curricular goals*, for example, “The learner is able to perceive an IP opportunity within a particular domain-specific situation”. Therefore, a feasible *instructional challenge* has to be given to the learner where it is possible for him/her to show his/her perceived IP opportunity (e.g. within a project work). Simultaneously, within an adequate *assessment*, this part of the innovative behaviour (here, “The learner becomes aware of an IP problem or chance, analyses the perceived IP problem or chance, and explicates main and side effects, risks, taking perspectives”, etc.) should be observable.

Table 3.5 Dispositions/IP competence facets according to the IP process structure, dispositions identified by the literature review, and situation-specific skills

Dispositions/IP competence facets according to the IP process structure	Dispositions identified by the literature review	Situation-specific skills
<i>Dimension I: idea generation</i>		
(1) Perceiving problems and chances	Entrepreneurial competencies and experience, proactiveness, goal-achieving behaviour, autonomous activity, recognising opportunities, context sensitivity	1.1 Perceive opportunities for IP
	Specifying limitations, entrepreneurial competencies and experience, proactiveness, goal-achieving behaviour, autonomous activity, analytical thinking	1.2 Analyse the situation
(2) Creating new (IP) ideas	Entrepreneurial competencies and experience, proactiveness, goal-achieving behaviour, autonomous activity, creativeness, innovativeness, unconventional thinking, visionary thinking	2.1 Create innovative IP ideas
	Specialist knowledge, proactiveness, goal-achieving behaviour, autonomous activity	2.2 Use creativity techniques
<i>Dimension II: planning and implementing</i>		
(3) Planning and monitoring (IP) projects based on the new (IP) idea	Specialist knowledge, proactiveness, goal-achieving behaviour, autonomous activity, analytical thinking, brokering competencies	3.1 Arrange work-packages and sequence them
	Specialist knowledge, proactiveness, goal-achieving behaviour, autonomous activity, analytical thinking, persistent behaviour	3.2 Procure, assess, and structure information
	Specialist knowledge, proactiveness, goal-achieving behaviour, autonomous activity	3.3 Use domain-specific terms and techniques
	Specialist knowledge, proactiveness, goal-achieving behaviour, autonomous activity	3.4 Use domain-specific tools
	Proactiveness, goal-achieving behaviour, autonomous activity, commitment building, communicativeness, emotional intelligence, and empathetic behaviour	3.5 Reasoned decision
	Proactiveness, goal-achieving behaviour, autonomous activity, context sensitivity, analytical thinking, intuitive problem-solving	3.6 Identify and analyse risks

(continued)

Table 3.5 (continued)

Dispositions/IP competence facets according to the IP process structure	Dispositions identified by the literature review	Situation-specific skills
(4) Implementing (IP) projects	Proactiveness, goal-achieving behaviour, autonomous activity, brokering competencies, social competencies, assertiveness, team competence, leadership competencies, championing, commitment building, inspiring others, communicativeness, emotional intelligence, and empathetic behaviour	4.1 Team work
	Specifying limitations, proactiveness, goal-achieving behaviour, autonomous activity, analytical thinking, intuitive problem-solving, persistent behaviour, emotional intelligence, and empathetic behaviour	4.2 Solve problems, manage disturbances
(5) Reflecting (IP) ideas/projects	Proactiveness, goal-achieving behaviour, autonomous activity, self-monitoring behaviour, persistent behaviour, communicativeness, emotional intelligence, and empathetic behaviour	5.1 Reflect whether the project was efficient and effective
(6) Selling (IP) ideas/projects	Proactiveness, goal-achieving behaviour, autonomous activity, analytical thinking, social competencies, assertiveness, leadership competencies, championing, commitment building, persistent behaviour, inspiring others, communicativeness, emotional intelligence, and empathetic behaviour	6.1 Introduce, “defend”, justify the project

3.5 Conclusions

3.5.1 *Summary of the Main Results, Discussion, and Implications*

For modelling IP competence as a manifestation of work agency, we ran a systematic literature review across 13 years. RQ1, which asked for the empirically investigated dispositions that are characteristic for mastering typical IP challenges, reveals that IP competence represents a very complex construct. When relating our findings to the concept of work agency, it is distinguishing that a variety of identified dispositions – which seem to play a crucial role in the effective transformation of individuals’ behaviour into innovative projects – show a huge overlap regarding both concepts. Within the educational sector, but also regarding activities for further developing employees’ IP competencies through efficient learning opportunities within company boundaries, such complexity bears an enormous challenge. Central IP dispositions, such as innovativeness, proactiveness, and the willingness to take

Table 3.6 Competence model for intrapreneurship

Dispositions/IP competence facets according to the IP process structure	Situation-specific skills	Observable behaviour/evidence
<i>Dimension I: Idea generation</i>		
(1) Perceiving problems and chances	1.1 Perceive opportunities for IP	The apprentice becomes aware of an IP problem or chance
	1.2 Analyse the situation	The apprentice analyses the perceived IP problem or chance (explicating main and side effects, risks, taking perspectives, etc.)
(2) Creating new (IP) ideas	2.1 Create innovative IP ideas	The apprentice generates a new innovative (at least an incremental) IP idea with regard to the perceived IP chance or problem
	2.2 Use creativity techniques	The apprentice applies tools for supporting the idea generating process
<i>Dimension II: Planning and implementing</i>		
(3) Planning and monitoring (IP) projects based on the new (IP) idea	3.1 Arrange work packages and aspects in sequences, and fix them in a Gantt chart	The apprentice creates a Gantt chart
	3.2 Procure, assess, and structure information	The apprentice searches for relevant information in documents or data files
	3.3 Use domain-specific terms and techniques	The apprentice applies, for example, a break-even point by means of complex calculations
	3.4 Use domain-specific tools	The apprentice calculates a break-even point by means of spreadsheets
	3.5 Reasoned decision	The apprentice decides among alternative solutions in view of disturbances (e.g. changes in market) on the basis of concrete reasons and arguments
	3.6 Identify and analyse risks	The apprentice assesses different risk scenarios
(4) Implementing (IP) projects	4.1 Team work	The apprentice shows that he/she knows and understands central categories of team work
	4.2 Solve problems, manage disturbances	The apprentice analyses and chooses appropriate strategies when team work starts to break down or becomes stuck
(5) Reflecting (IP) ideas/projects	5.1 Reflect whether the project was efficient and effective	The apprentice reflects phases, elements, or the whole project and evaluates them with regard to goal achievement, appropriateness, or success (explicating things that went wrong (e.g. as taking too much time for a particular work package) or well (e.g. recognising that the project idea got huge resonance from the target group), etc.)
(6) Selling (IP) ideas/projects	6.1 Introduce, "defend", justify the project	The apprentice presents his/her IP project and persuades others

risks, can be strengthened, for instance, by the following workplace conditions: giving the freedom to implement new ideas, providing employees with resources for realising their ideas, honouring their proactive initiatives, or taking on risks that are linked to IP projects.

By contrast, dispositions such as emotional intelligence, achievement motivation, and self-efficacy are considered as relatively stable across the human life span and can therefore be influenced only by a concerted effort within a long-term perspective (Kyllonen et al. 2005). The following implications for the development of humans' IP competencies can be derived from these findings: since emotional intelligence is largely based on personal experience and can only be influenced over a long period of time, it should already be receiving training in the early stages of a human's lifetime. It is recommended to embed learning initiatives for developing emotional intelligence within general, vocational, and higher education programmes and to promote this disposition continuously within the company by offering suitable trainings and coaching systems. Moreover, for achievement motivation, an adequate learning environment to motivate, for example, students in vocational and higher education to perform at a high level should be created at an early stage. For this purpose, students' autonomous project work – which is stated as a central factor for nurturing IP behaviour by Marvel et al. (2007) – should be integrated into the respective study programme to enable the progress of effective learning. Self-efficacy should be developed during the very first years of a child's schooling. Tasks should pose a challenge, but students should still be able to master them. This results in experiencing a feeling of success. It strengthens self-confidence and leads to a stronger degree of self-efficacy in the long run. Since self-efficacy, achievement motivation, and emotional intelligence are difficult for companies to influence, particular attention should be paid to recruit employees who distinguish themselves by these essential IP dispositions through appropriate assessment centre tools. Employees who already display these attitudes should have their intrapreneurial endeavours promoted.

RQ2 deals with the question of how to consolidate the identified IP dispositions of the knowledge and skills category within a performance-oriented competence model for IP. We have succeeded in conceptualising a comprehensive, fine-grained, and action-based IP competence model that serves as a theoretical basis for formulating particular curricular goals and designing complex learning arrangements in terms of intrapreneurial skill development. Furthermore, it constitutes the theoretical foundation for ensuring a meaningful performance-based measurement of IP competence. This is ensured as we identified observable evidences for all situation-specific skills covered by our IP competence model. Hence, valid conclusions from an individual's actual performance to his/her level of IP competence can be drawn. Metaphorically speaking, the defined evidences can be understood as the tip of an iceberg, which is located above the water surface. The latent IP competence facets and situation-specific skills by contrast form the not directly observable construct situated below the water surface (see Kreuzer et al. 2017, this volume). An item pool that is derived from such a thoroughly setup competence model enables a content-valid model-based measurement. Based on corresponding assessment instruments,

learners' proficiency can be identified. This delivers valuable information regarding IP dispositions and content areas where further skill development is required. Weber et al. (2016a) used the presented performance model for designing an action- and technology-based learning and test platform addressing real working-life situations of apprentices in vocational education and training who intended to become industrial clerks (see Kreuzer et al. 2017, this volume). In terms of the education sector, such model-based authentic measurement instruments enable an evaluation, if and how far the superordinate educational objective of ensuring the human resources of a society is met regarding IP competence (Baethge et al. 2006). Consequently, our model essentially contributes to supporting learning and teaching processes which aim to enhance students' intrapreneurial competence – as a manifestation of work agency and decisive twenty-first century skill, that is required to meet the demand of today's labour market.

3.5.2 Limitations and Directions for Future Research

The results of this study should be considered in light of some limitations. (a) Since only scientific journal articles written exclusively in English and German – books and unpublished working papers were not consulted – are included in the literature review, it cannot be claimed that the literature studied represents the full spectrum of all relevant scientific publications on IP. This limitation also results from the fact that articles published before 1985 were not taken into account within our review. For further research questions – like expanding the concept of IP – other decisions for the sampling process (including more conceptual or even working papers) have certainly to be made. (b) Moreover, some of the analysed studies show sample-related limitations with regard to the generalisability of their results. A fruitful contribution of further research would be to investigate whether the identified relations between IP dispositions and IP behaviour also turn out to be significant in other samples – for example, in terms of individuals operating in other industries, countries, or cultures. (c) Since adequate methods for measuring noncognitive dispositions, constituting an important facet of competence, are at present quite limited, only the dispositions of knowledge and skills were considered within our IP competence model. Referring to the construct of “human agency in work context”, the IP knowledge and skills dimensions cover the component of “agency competence”, whereas the IP attitudes dimension rather addresses the components of “agency beliefs” and “agency personality” (see Goller and Harteis 2017, this volume). The IP attitudes dimension also comes close to the one of “professional identity” discussed by Eteläpelto et al. (2013). Ergo, the great challenge of designing valid instruments for capturing IP attitudes – and therefore all dimensions of the work agency construct – constitutes a desideratum for further research. (d) Up until now, little attention has been devoted to the field of developing an intrapreneurial mindset of employees engaged in daily working life or to IP education for students that fosters innovative behaviour. Additionally, more research about how IP dispositions

can efficiently and effectively be learned and taught is required (Bjornali and Støren 2012; Dos Santos and Spann 2011; Thornberry 2003; Weber et al. 2016a, b), especially since research shows that apprentices/adolescents are already boosting innovations in companies (Backes-Gellner and Rupiotta 2014) which are indispensable for success (EFI 2014). As our conceptualisation of IP competence shows a huge overlap with work agency, the corresponding abilities and competencies might be supported in various fields of work.

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Chapter 4

Three Aspects of Epistemological Agency: The Socio-personal Construction of Work-Learning

Raymond Smith

4.1 Work and Personal Agency

Consider, for a moment, the circumstance and significance of a new employee in a wholesale fruit and vegetable warehouse. With no previous experience and only some several weeks in the job, Chris is being berated by his boss following a complaint from an unhappy customer whose order was supposedly packed incorrectly. At its best, this is an instance of instruction, a learning experience. At its worst, it is bullying. Chris is quiet; his head is lowered. He stands before the abuse but does not dare look up. His boss is shouting aggressively. His fellow workers are watching. They have seen this before. It is not easy to watch. However, Chris's passive stance and seeming embarrassment through the ordeal mask the focus and deliberate concentration of a young man who is busy with his work – not simply in the general sense of being at work but in the immediate and productive sense, that at this very moment, he is attending to the actualities of the task at hand, the task his boss's inconsiderate instructional reprimand is interrupting.

In recalling this unpleasant incident during a research interview some short time later, Chris remarked,

while he [the boss] was going off at me about something that happened ages back, I'd be thinking about what I was doing now and how to get that right.

Chris had learned that these emotionally charged moments were, for him, a form of reflective downtime that, as brief as they were, enabled him opportunity to stop and reflectively review his progress on current orders (see Smith 2006). What was invisible to any observer (and the boss) was the exercise of personal agency being

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enacted as Chris's purposeful practice regarding how to use effectively that relatively small moment in his otherwise very busy working day.

Such work incidents, indeed all work activities, may be considered illustrative of three primary aspects of personal agency and its enactment. First, agency is a property of the resources engaged in activity. When agency is simply defined as an ability to mediate activity (Kaptelinin and Nardi 2012), it becomes possible to view all resources in action as having and exerting some form of influence in shaping the nature of that action. All things – human, material, cultural, ideational, etc. – are imbued with such ability. For example, the hammer drives the nail. The hammer holds this ability by virtue of its design, its purpose and the practices through which this property is manifest. Similarly, culture determines that we all drive our vehicles on the left- or the right-hand side of the road, constant annoyance can drive us to distraction and ideologies commonly drive the social values and priorities by which we live. In the work incident briefly described above, Chris has certain properties that distinguish him and the ways by which he shapes and influences the nature of the actions in which he participates. Among other things, he stands still. He does not speak or look directly at his boss. He listens, makes choices about what he focusses on and thinks about, and he waits until his boss is finished before resuming his work. He is able to do this because he can act in these ways by virtue of his personal properties – his personal qualities and understandings of the action in which he is engaged. His contributions to the activity, that is, his enactment of these personal properties, mediate its character and direction.

Second, agency is relationship enabling. It establishes the interactive foundation on and from which activity progresses. When agency is defined as a social practice, that is, the performance of behaviours and understandings only interpretable within the broader patterns of interdependent social interaction (Reckwitz 2002; Schatzki 1996), it becomes necessary to view agency as a set of shared relational ways of being together in activity. Hence, personal agency is more than the enactment of personal properties. It is the negotiated enactment of these properties within the contexts, relationships and purposes that make such properties, and the actions they substantiate, meaningful and consequential. Chris is in relationship with his boss. Together they co-construct this relationship as their means of securing the work and learning of packing fruit and vegetable orders for customers. Granted, there may be better ways of accomplishing this work (i.e. without abusive and intimidating behaviours). Nevertheless, for both men, their interaction generates the relationship on which their work together progresses. And Chris is active within this relationship. He generates, finds and utilises the opportunities this relationship affords him to improve his work – even in the heat of the reprimand noted above.

Third, agency is transformational. To act is to change things (Wertsch 1998), both from what they were and what they could be. When agency is defined, for example, in terms of capacities, intentionalities, volition, contingencies, endeavour, priorities and orientations (e.g. Hall 1992; Emirbayer and Mische 1998; Ermakoff 2015), its relational and multiply variable qualities become significant. Hence, in the premeditate, what happens and what might happen carry significant potential as indeterminate possibilities and probabilities. Some immediate happenings may be

considered more likely, that is, more probable, but they cannot be guaranteed. The mediating factors that give rise to activity are not fully predictable. Hence, outcomes emerge as further actions to be mediated. They may be familiar and expected (perhaps reproductive) or they may be innovative and surprising (perhaps transformative) but they cannot be the same. In relation to Chris's circumstances and experience, he has been reprimanded before. He has seen others fired for making similar mistakes. Likewise, he has seen others avoid being subjected to abusive reprimand for similar mistakes. Within such instances, the phone might ring, another truck may arrive, the cold room alarm may sound – anyone of many things may intervene and alter what is happening and how it is being enacted as the constant flux of work unfolds for him and his boss. He has learned not to speak in these instances of reprimand. He is learning how to manage his boss. He is learning how to improve his work performance. Things have changed and are changing, and noticeably so, within these early weeks of his new job. He is immersed in these changes, and this immersion is part of their occurrence.

These three aspects of agency highlight the socio-personal nature of participation and engagement in work and the learning it necessitates and accomplishes. Further, they offer ways to focus on specific elements or aspects of work and learning within an analytic framework that can account for the very broad range of resources enacted in these activities and hence acknowledge agency as a learned and developing socio-personal resource among the many enacted in work. Through them, agency comes to be defined as an impetus for further action, an emergent momentum that can be multiply and variably generated, interpreted and apportioned. Hence different forms and measures of agency emerge and co-occur in activity as the sources, purposes and qualities of resources are variably identified and emphasised. For example, the concept of human agency suggests notions of universal human qualities and purposeful interaction in the world. For Archer (2000), humans are the ultimate source and origin of social life. The concept of personal agency suggests notions of individual action and emphasises the unique self and the person-dependent construal and construction of experience (e.g. Billett and Smith 2006). By contrast, the concept of collaborative relational agency emphasises the nature of inter-professional work where the energies and efforts of a range of people comprises a system of distributed expertise that can address complex social problems (Edwards 2005). Yet other understandings of agency include situated agency, professional agency, structural agency, conditional agency, distributed agency, epistemological agency, material agency, etc. These numerous understandings of agency highlight the diverse perspectives on and propensities of the concept to illuminate the causes and consequences of activity. In this chapter, the focus is on workers' personal agency and its conceptualisation as epistemological agency. This agency remains simultaneously individual, collective and social as the person is understood to be "the self-in-action" (Smith 2006), a relational psychosocial being.

In this chapter, these propositions are further examined and elaborated with a particular focus on conceptualising learning as the exercise and manifestation of epistemological agency. Epistemological agency is defined as the personal management of learning resources inculcated in the generation and development of

knowledge. In work, such management is manifest as the individualised enactment of the occupational and vocational skills and understandings necessary to the performance of work. As such, epistemological agency is a socio-personal practice through and by which the making of meaning and knowledge is initiated and enabled. It is people who learn, and they do so through their enactment of and engagement in activity that is socially sourced. Their engagement is personal, and so they “bring together”, both physically and ideationally, the resources necessary to their engagement. This bringing together does not equate to control (although such a possibility cannot be discounted). Rather, it positions the person as the locus of their learning practice. This distinction is subtle. In considerations of learning, the person is central within not separable from their context. Epistemological agency is a concept that captures the notion that it is the person who is central to and, thereby, responsible for the nature of the bringing together they accomplish as learning. Here, this “bringing together” is viewed as active and hence as a management practice – as epistemological agency, the person-dependent socio-personal practice of constructing knowledge.

Throughout each of the three sections that follow and in its concluding discussion, the chapter suggests how the three primary aspects of agency support different approaches to examining learning in and through work and how they help identify the personal work-learning agency that is epistemological agency. Hence, epistemological agency comes to be seen as a dynamic quality of learning in work. It is inherent in the primacy of the person as the agent who learns (the individual and individuality). It is emergent from the relational connectedness that is the context or relationships by which it is enacted (the social and sociality, the mutual and mutuality). And it is generative of the changes and transformations that evidence the purpose and responsibility we ascribe to work-learning activity through such things as improved performance, skill development, enhanced job satisfaction, etc. (the value and evaluation of practice).

4.2 Three Aspects of Agency

4.2.1 Agency 1: Considering Properties

Agency is a concept that seeks to capture the sources and levels of influence that mediate activity. At a generative level, personal agency is the qualification or form of agency that seeks to affirm the notion that humans (and saliently, individuals), in part, create, shape and therefore become responsible for the circumstances in which they participate. In work, those circumstances include learning. Like breathing, learning and acting (in work and any other context) may be considered complex but fundamental human properties that, in part, define us.

Human properties, whether expressed as capacities (potential or actual), purposes and priorities (significant or otherwise) and/or as essential (innate or experiential),

are many and varied. At seeming fundamental levels of human nature, we all feel, learn, think, communicate, socialise and care. Such properties are humanity and life defining. Some neuroscientists and psychologists postulate the concept of executive function as one such human defining property (Miyake et al. 2000; Lezak 2004; Zelazo et al. 1997). Executive function is a brain-based capacity to manage and/or control cognitive processes such as memory, reasoning, planning, problem-solving, decision-making, etc. Lezak (2004, p. 18), for example, states:

Behaviour maybe conceptualised in terms of three functional systems: 1) cognition, which is the information handling aspect of behaviour, 2) emotionality, which concerns feelings and motivation, and 3) executive functions, which have to do with how behaviour is expressed. Components of each of these three sets of functions are as integral to every bit of behaviour as are length, breadth and height to the shape of an object.

Through such statements, the fundamentality of executive function to the human condition is emphasised, and the behavioural management properties it identifies and attributes become grounded in the very tissue of our bodies. The capacity for self-management is one such property. Within the context of medicine and support for patient responsibility for health, Lorig and Holman (2003, p. 1) declare the fundamentality of self-management when they state: “One cannot not manage ... it is impossible not to manage one’s health”. They go on to outline the five core self-management skills as: problem-solving, decision-making, resource utilisation, partnership formation and taking action. From this perspective and through these core skills, they advocate for learning support that assists people to address the important tasks of personal behaviour management, role management and emotional management that rely on these core skills and are central aspects of self-management.

In other ways, Goffman (1969) may be said to have made similar claims about the nature of self-management in relation to personal perception and the social practices of impression formation and impression management in which all must engage as part of their being in the world. For Goffman (1969), it is impossible not to manage others’ impressions of oneself through self-management – attempts to do so will fail because others, out of the necessity of meaningful interaction, will attribute these management capacities to those with whom they engage. And so, the same may be said of work. That is, it is impossible not to manage one’s self in work. Hence, capacities of self-management, whether expressed in terms of executive function, health management or interaction management, are fundamental human characteristics that are both personally enacted and socially attributed as common human properties.

In work, learning can be described as the personal demonstration and development of the management of work-based resources – those resources include the self, materials, systems, people and practices of the workplace (Smith 2006). How this management is enacted and, hence, the personal properties it illuminates can be markedly different from one employee to the next. For example, Chris, as noted above, consciously manages the time available to him within the interaction with his boss in a quite specific way. Through his construction of this time as a brief performance review and reflection opportunity, he is also managing, for example, his

behaviour as he engages in the interaction, certain aspects of his boss's impression of him, the relationship they share as employee-employer and his personal learning practices. Smith (2006) elaborates these and other work-related learning resources as five key sets of work-learning resources that Chris and his colleagues are managing as their agentic construction of the skills, knowledge and understandings their work requires. The five are (a) time, (b) organisational relationships, (c) motivation (as task engagement), (d) learning strategies and (e) identity (as roles and responsibilities). Across these five "action sets", workers generate, develop and sustain a personal agenda that identifies and illustrates how they go about learning to do their work.

This dynamic agenda evidences the array of management skills or agentic personal properties that workers are constantly enacting and developing through their work. For example, new product is arriving at the warehouse all through the day and night. It must be stored and rotated with existing stock to ensure supply and reduce wastage by distributing older stock first. Older stock can require additional effort to prepare it for sale. Eventually older stock can be considered too poor for sale and so must be thrown out – a cost to the business that needs to be avoided through careful stock management. Decisions need to be made. Chris describes the negotiations he enters into as his work forces him to find the balance between levels of personal effort invested, customer needs and organisational stock rotation policy:

You've got to know how much effort to put into what you're doing. Like, do you spend time cleaning up the old stock and risk them sending it back or do you send out the good new stock and risk the boss blasting you at the end of the day because there's too much old stock left.

Such decisions cannot be avoided. They must and will be made. Chris and his order packing colleagues manage these choices from among the alternatives available within their practice. They cannot "not" make decisions. And so they enact their capacities to make such decisions as agentic properties of their work and learning practices. In doing so, they get better at what they do as they learn and improve their practice through their exercise of the epistemological agency their work demands, supports and develops. For Chris and his colleagues, it is not a question of whether or not they have agency. It is a question of how they enact the agency their work both enables and demands. Further to this, arises the question of how successful they become in accomplishing the learning this agency supports. This agency is predicated on the range of personal and contextual properties enacted. At the level of personal practice and agency, they include capacities of self and resource management that cannot "not" be enacted. Such capacities, be they seen as skills, dispositions, priorities or elements of any agenda, may be conceptualised as properties of agency.

4.2.2 Agency 2: Considering Relationships

It may be argued that the primary human relationship is that which is lived and shared as the self-in-society. All are born into social life. All are nurtured and enculturated by the already socialised and all are sustained by the social capital they can generate and access. At its simplest, this relationship is expressed in the agency-structure dichotomy – as exemplified by the tensions emphasised in questions about the socio-personal relationship – do persons make society or does society make persons. At its most complex, the implied separation of people and their social contexts is transcended or collapsed, and more holistic metaphors are sought. For example, Dewey and Bentley (1975/1949, p. 109) use the unwieldy term “organism-in-environment-as-a-whole” to capture the unity of existence, the inseparability of experience. For them, the separation of people and their contexts cannot even be tolerated at an analytical level. Hence, people are not “in” the world but “of” the world. Being “of” the world is being part of the relationship that is living (and working, and learning, etc.)

There are other metaphors, for example, Heidegger’s (1927/1962) “dasein”, Mead’s (1934 “sociality” and Giddens’ (1984) “structuration”, each representing a form of unification that perhaps ontologically favours some aspects of the socio-personal relationship over others. For Heidegger, the concept of dasein captures a coherent existential whole of being-in-the-world – ultimately a project of the self who cannot separate themselves from the world. Mead’s sociality captures the multiplicity of contexts in which one is simultaneously engaged and the constant interaction with others, history and the future this requires. Giddens’ structuration advances that agency and structure are inseparable, the one the property of the other as together they constitute society. And yet it is the human (not social) capacities of reflexively monitoring and evaluating actions (self, group and others), all be they structurally bound social actions, that generate and transform society.

In seeking to describe and explain the nature of the socio-personal relationship that is evidenced in human activity, these kinds of metaphors and their various ontological premises advance a resounding confirmation of the relational and interdependent character of agency. It is only together (i.e. with others and in context) or “in relation to” that anything happens. In this sense, agency may be conceptualised as relationship-in-practice – the action and the activity. And relationship is thus dynamic and multifarious as the individual connects with themselves; their macro-, meso- and micro-contexts; and the numerous others who populate them in the immediate, past and future orientations of who they are, have been and are becoming. This is because society consists of people in interaction – all acts are interactive (Berger and Luckman 1966; Blumer 1969); hence, people are always in relationship with one another and their historical and developing self. Agency makes the nature of that relationship emergent as activity, visible, examinable, interpretable and so foundational of what happens next.

In seeking to elucidate this relationship and its agentic character, work-learning researchers have adopted a range of perspectives – all are concerned with the processes and practices that address how interactivity occurs and, hence, how learning emerges. For example, Billett (2008) discusses the relational interdependence between workers' understanding and enactment of what their work enables (personal agency) and the workplaces' capacity to suggest and secure its work outcomes and performance objectives (social agency). Learning, as personal development and altered practice, may be seen as emergent from within this relationship that is, in part, characterised by fluctuating contested and complementary goals. Drawing on research with hairdressers, Billett (2008, p. 49) notes, "despite being subject to the close scrutiny of managers and owners, hairdressers were able to exercise personally-preferred options when engaged in hairdressing". Hence, it is only in relation to the contested goals or social press of managers and owners that the personal agency of hairdressers can be identified as enacted. Rather than being seen as contrary to, or evidence of the weakness of the social press, these hairdressers' agency may be seen as emergent from the negotiated relationships that characterise their work practice and conditions.

In other ways, Edwards (2005) emphasises the agency of relationship in her elaboration of the need and benefits of recognising and working with others to secure access to and contributions from as many of the resources available in activity as possible. Doing so is enacting "relational agency" – a collectively sourced enactment that can be individually learned and purposefully developed. Such enactment establishes forms of inclusion and mutuality (as aspects of context and relationship) that enable individual and collaborative learning, empowerment and support. Drawing on research with women's support centre workers and users and teachers, Edwards notes the agency inherent in friendliness and responsive professional practice. Friendliness is open and both gives and accepts support. Responsive professional practice nurtures collaboration and "involves resourceful use of the expertise of others and aligning one's professional practice with that of others" (Edwards 2005, p. 178). Hence, relational agency is a propensity to action that is developed within relationships of respect and openness. Such relationships are the agentic foundation of better outcomes for women needing support and children needing stronger educational attainment as the forms of social inclusion that will sustain them.

In yet other ways, Smith (2012) elaborates negotiation as the basis of work-worker-workplace interactivity that generates the relationship from which learning emerges. Negotiation is both the process of interactivity and the context in which that interactivity occurs – all interactivity is negotiation and workers manage themselves as parties within the negotiation. Hence, it is the negotiations in which they are engaged, by virtue of their being workers at work, that position them as parties, active participants, in the learning and development activities that shape their practice. Drawing on research with firefighters and personal trainers, Smith (2012) illustrates how it is the combination of negotiations with tools, equipment, colleagues and work systems and policies that generate the relationships of care, duty and responsibility that sustain work as a socio-personal practice of learning. More than

workplace cultural practices, these relationships are highly subjective experiences that demand and enable the transaction of individuals' personal values and priorities as they enact their work in highly person-dependent ways (a strikingly anomalous occurrence within the protocols of a strong military style command and control culture like the fire service). In highlighting the relationships that constitute work, Smith (2012, p. 14) notes that the firefighters and personal trainers examined,

... agentially enact their engagement in work and learning in their own personal ways and thereby realise their vocational practice, not as something solely unique but as something collectively accomplished through negotiations with the resources of their context – themselves, their co-workers, their clients, etc.

These few researchers, Smith (2012), Edwards (2005) and Billett (2008), illuminate the circumstances of practice as the locus of agency that drive the changes recognisable as learning, as enhanced social inclusion, as shared goals and as improved work performance. These accounts do not conflate the personal and the social. Rather, they seek to acknowledge and value the contributions of all within the mix of fluctuating resources that characterise work and activity. As intersubjectivity constructed through contest and affiliation, as collaboration developed through alliance and as negotiation enacted out of participative necessity, relationship predicates agency and alerts us to its collective and interactive character.

4.2.3 Agency 3: Considering Transformation

As transformational, agency is evidence and means of change. To be “agentic” is to be both immersed in and generate change and, thus, to experience and accomplish influence as the transformations enacted in work and learning activity generate the emergent possibilities that characterise the next – the next moment, the next event, the next requirement, etc., and all the different this brings. Strong or weak, significant or not, agency manifests as transformation of all the resources by which activity is constituted. In work-learning, this may be seen as any number of change types, for example, as innovation, the development of expertise, productivity gain and enhanced employee satisfaction. Agency is transformative of people, place and practice (Smith 2014b).

Equally, learning is change and the nature of that change, as experience (process) and as legacy (product) is evidenced by the different conceptual approaches deployed in its consideration and the altered circumstances by which it is recognised. So, for example, through learning (in work as elsewhere); knowledge, perspective, behaviour, practice and resources (hence, people and their skills, understandings, purposes, habits, contexts and institutions) are changing. They may be seen as transformed (Mezirow 2000), expanded (Engeström 2001), reconceptualised (Argyris and Schon 1978), re-constructed (Habermas 1981), reorganised and reconstituted (Joas 1996), developed (Stevenson 1994) and problematised (Freire 2005) – as the movement from one state of being and circumstance to the next. Such

movement is temporal and conceptual, brute and practical as moments, activity and resources coalesce in the dynamic churn and flux that is work. Agency can be seen as the means and evidence of this movement or transition and the enacted differences (i.e. changes, transformations, etc.) by which it is accomplished.

Such transformations may be intentional and effortful, perhaps enduring and consequential, as when the novice becomes the expert. We celebrate (personally and socially) the graduation of the student, the licencing of the apprentice and the promotion of the capable for their proven development in becoming better at what they do and, thereby, contributing to the further enhancement of practice (Harteis and Gruber 2004). Equally, such transformations can be incidental, emergent from happenstance and perhaps ephemeral and of little consequence, as when sudden awareness occurs or immediate yet temporary solutions are found. Smith (2014a) describes learning of this kind, with its emergent realisations from interactions not intentionally seeking such outcomes, as discovered negotiations.

In both cases, consciously or less so, circumstances have changed, and the new and different becomes palpable whether or not it is planned or incidental. The attribution of source or cause or motive for the transformation to any particular person or effort may or may not be relevant depending on the perspectives taken and the considerations made. In any case, it remains sufficient to understand that the interactive relationship that brings resources together is the foundation of the transformations accomplished. And such transformations will be accomplished. As Heraclitus supposedly declared around 500BC (Graham 2008) – nothing stays the same – one cannot stand in the same river twice.

Dewey and Bentley (1975) elaborate the transformation of people, practice and resources that emerge from activity through the concept of transaction. Essentially, all activity is interactivity, and all interactivity is transactivity. All action changes things (Dewey and Bentley 1975; Wertsch 1998). Dewey and Bentley draw on a range of examples to illustrate this proposition. For example, with reference to the world of commerce they state,

... a trade, or commercial transaction ... determines one participant to be a buyer and the other a seller. No one exists as buyer or seller save in and because of a transaction in which each is engaged. Nor is that all; specific things become goods or commodities because they are engaged in the transaction ... Moreover, because of the exchange or transfer, both parties (the idiomatic name for participants) undergo change; and the goods undergo at the very least a change of locus by which they gain and lose certain connective relations or 'capacities' previously possessed. (Dewey and Bentley 1975, p. 270)

So, through such a transaction, what belonged to one now belongs to another. What was valued by one has now been revalued by the other through the activities or negotiations that constitute the transaction. Human action, in all its forms, generates and creates the transformations identifiable as new or different understandings, practices, relationships, and resources. For example, in the case of farming wheat, the transaction of tilling turns the ground into a cultivated field, the transaction of planting turns the cultivated field into a crop, the transaction of harvesting turns the crop into grain and the transaction of milling turns the grain into flour that will in turn become bread as the transaction of baking brings yet other actions and different

resources to the making of food, to the transformation of all that is transacted. For Dewey and Bentley (1975, p. 271),

... from birth to death every human being is a “Party”, so that neither he nor anything done or suffered can possibly be understood when it is separated from the fact of participation in an extensive body of transactions – to which a given human being may contribute and which he modifies, but only in virtue of being a partaker in them.

With a different but nevertheless complementary focus on the pragmatics of knowledge, its construction and uses, Engeström (2007) posits two forms of work-generated knowledge that evidence the changes manifest through activity. They are stabilisation knowledge and possibility knowledge. From the perspective of learning as the passage to improved outcomes, agency as transformation may be at its weakest when manifest as stabilisation knowledge and at its strongest when manifest as possibility knowledge. Engeström (2007, p. 271) describes stabilisation knowledge as that which is “constructed to freeze and simplify a constantly shifting or otherwise bewildering reality ... to turn the problematic into a closed phenomenon”. Using the example of the difficult or “heartsink” patient, Engeström explains how stabilisation knowledge is a naming practice, a form of labelling and categorising. This naming is deployed as a kind of problem management strategy through which work problems, such as difficult patients, may remain unsolved while being more easily approached because they are known and expected to be unsolvable within the usual practices of work. So, the difficult patient remains difficult, the problematic client remains problematic and the work and learning practices that perpetuate this unwanted but reasonably tolerable set of circumstances have “stabilised” the difficulty. By contrast, “possibility knowledge is agentive knowledge, the instrumentality of agency at work” (2007, p. 271). It is knowledge that puts meaning into movement and “opens up possibilities”. For Engeström, this kind of knowledge is genuinely transformational. He illustrates how the collaborative practices of health professionals and troublesome patients can generate possibility knowledge that enables greater levels of patient self-responsibility that, in turn, become the beginnings of problem solution through their positive transformation.

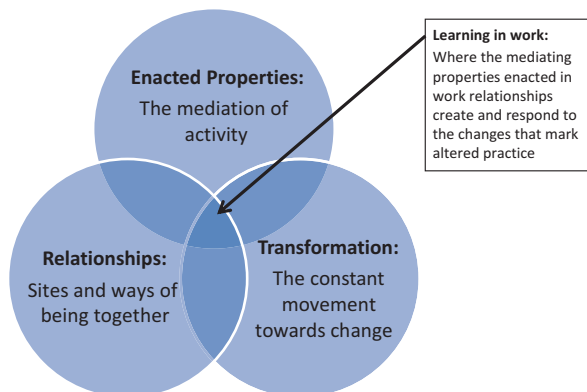
There is a sense in Engeström’s proposals that stabilisation knowledge is not transformational and therefore not evidence of agency. Yet, if this form of knowledge is to be accepted as work generated, it cannot be reduced to being wholly reproductive. The entrenched and routine does not equate with the impenetrable or hopeless. Smith (2014a) elaborates the seeming repetitive and unchanging negotiations of work as “protracted negotiations” where the goal orientated efforts of work persist in the circumstances of yet to be realised accomplishment. Such work can be frustrating as wasted effort and unreasonable expectation. Smith (2014a) sites the staff training efforts of a chef who seems unable to secure the goals he desires as his staff repeatedly fail to redress their work practices that do not align with restaurant requirements. Yet change is manifest. The chef’s awareness of his frustration, his repeated efforts and the staffs’ seeming unwillingness to alter their practices are emergent outcomes that contribute to sustaining the relationship. Work activity that sustains potential for the emergence of more overtly recognisable possibility

knowledge is surely a transition, a movement from now to then, a promising (if not yet realised) step closer to the levels of change that could be accepted as agentic. It is in this sense that the movement to change is always underway and that agency as transformation is always being enacted even when seemingly undetectable.

Part of this step closer movement that is agency as transformation is captured in the notion of potential or contingency. What could be is (within limits) as possible as what is – and so anticipation, probability, the entertainment of alternatives, choices and the decisions these promote become a substantial part of immediate action and emergent transformations. Where decision follows consideration of alternatives, outcomes (whether significantly different or ostensibly the same) are evidence of strong agency. The decision to keep things as they are, for example, is agentic and therefore transformational because what otherwise might have occurred has been avoided, that is, the desired is being pursued. Planning, organising and managing are grounded in such activity. By contrast, where the clearly unexpected emerges (and transformation is obvious), agency may be said to be weak from the personal perspective in that the alignment of intentionality and outcomes is lacking yet strong from the transformational perspective because things are decidedly different. Lave and Wenger (1991, p. 57) state it simply, “Learning, transformation and change are always implicated in one another”.

Action changes things (Wertsch 1998) because all actions are transactions (Dewey and Bentley 1975), but the nature of those changes, understood here as transformations, remains arguable in terms of significance and causality. Here, from the perspective of viewing agency as a socio-personal phenomena that can be conceptualised through the three primary aspects outlined above, all changes are important, and their origins are not isolatable within any single resource (human, material or ideational) enacted in activity. So, (1) properties are enacted through the interactivity of resources that are (2) the relationships from which (3) change as transformation emerges. Agency is the concept that captures this correlation and declares it as the impetus of personal and social change. Significant among these changes is learning. Figure 4.1 below seeks to visually represent these understandings.

Fig. 4.1 The three aspects of epistemological agency



These approaches to understanding agency have particular implications for understanding the nature of learning in and through work. In concluding its considerations, some of these implications are explored in the following section.

4.3 Exploring Work-Learning as Epistemological Agency

As stated earlier, epistemological agency is defined as individuals' management of the resources enacted and developed as the occupational knowledge, skills and practices comprising work (Smith 2006). This learning in and through work is not simply a reproductive process whereby workers imitate and copy the socially derived practices into which they are being inducted through employment. Rather, it is accomplished by workers personally managing (for better or worse) the range of mediating factors that constitute their work. These factors are situated, that is, highly person and context dependent, and comprise what can be referred to as a personal workplace learning agenda (Smith 2006). This agenda and its negotiated enactment are accessible and examinable through the three primary aspects of agency outlined above. This agenda is foundational of individuals' engagement in the professional learning and development opportunities their work can provide. For those who pursue learning in work and those who seek to facilitate and support it, better understanding this agenda may lead to better work-learning outcomes.

First, in the terms of agency as property and particularly as regards individuals' properties, the subjective is highly significant; the personal is fundamental. As Boud and Garrick attest (1999, p. 3) "an understanding of workplace learning means recognising its complexities, its competing interests and the personal, political and institutional influences that affect it". Accounting for the personal is building awareness and understanding of workers' personal properties – and these are many. Further, as Eteläpelto et al. (2013) propose, such accounts cannot be considered in moments or cross-sectional snap shots. Rather, they must be considered developmentally, across a life of engagement in social practice. Yet further, individuals' personal ways of working, acting, learning and knowing cannot be simply quarantined as sets of knowledge and skills developed and deployed. Rather, as Archer (2000, p. 12) indicates, the levels of personal investment in action, often delineated as personal priorities, values, interests, motivations and concerns, must be accounted because individuals "will determine *how much* of themselves is invested in their social identities, and therefore *what* they will bring to living them out". To account for "what" and "how much" is to begin to account for the personal properties that individuals bring to mediating their engagement in work and, hence, the learning experiences and legacies it necessitates. Yet further again, personal properties may be tacit and subconscious as workers act without awareness of the bases of their engagement. Hence, they may be perceived and attributed by others in their efforts to make meaning of individuals' personal practices. Overall, to account for the range, significance and intensity of the personal properties workers bring to and invest in their work is demanding and yet fundamental to acknowledging the com-

plexity of the learning resources carried, developed and deployed by individual workers.

Accounting for personal properties becomes not just a matter of identifying and evaluating them as the individual resources and actualities on which personal engagement in activity progresses. More than this, it becomes a relationship matter where actual and referent properties need to be discerned and differentiated. Returning to Chris – our original illustrative example – he demonstrates properties of patience and respect and a capacity to listen to his boss. What he actually hears and responds to through the boss's shouting is problematic and cannot be assumed from what is observed. Understandings of what personal properties Chris enacts and how and why he enacts them are no more salient than what personal properties his boss attributes him with and, similarly, what personal properties Chris attributes to his boss. All the mediating resources enacted in work need to be accounted.

Second, in terms of agency as relationship, the qualities and parameters of the relationally interdependent interactions that constitute work cannot be glossed over or subsumed within broad structure-agency considerations. For example, strong personal learning can occur within circumstances that might initially be described as limiting and constraining. Equally, strong personal learning may fail to be realised in circumstances deemed favourable to learning. Fuller and Unwin (2003, 2004) assert that participation in multiple communities of practice identifies an expansive learning environment that indicates more and higher-quality learning opportunity. Yet, it is quite possible that such multiplicity may lead to a weakened learning position. For some workers, the competing demands of numerous communities of practice and task changes may mean participants are unable to secure the necessary experience or time to develop the deep understanding and more finely honed skills associated with expertise. What presents as an expansive learning environment may in fact be practised and experienced as relatively limiting. For example, Jørgenson (2013) reports this very case where Danish school-based apprentices, given the opportunity to move among numerous employers in expectation of expanding their occupational skills and understandings, lose interest and drop out of programmes specifically designed to support varied learning opportunities. Equally, the opposite may be true. Studies of vineyard workers (Bryson et al. 2006) and fruit packers (Billett and Pavlova, 2005) have indicated that employees, in what would be described as restrictive learning environments, have enjoyed rich and personally rewarding learning experiences that have advanced their personal development and career trajectories in ways more closely associated with expectations about expansive learning environments. These studies reveal that restricted opportunity at work and particularly confinement to a single small community of practice can lead some workers to proactively seek out the kinds of knowledge and practise experiences they require to advance their prospects and secure greater job satisfaction.

Relationships matter, and the kinds of relationships that underpin work-learning circumstances and outcomes are many and complex. Workplace relationships marked by negative personal interactions may or may not negatively impact workers' learning and performance (Ferris and Kline 2009). Mentoring and individual learning support does not necessarily lead to enhanced work and learning outcomes

(Tedder and Lawy 2009). Examining work-learning requires accounting for the numerous kinds and qualities of relationships through which agency is enabled and accomplished. They may be personal (with self, colleagues, supervisors, clients, etc.). They may be cultural (with tools, equipment, systems, policies, etc.). They may be highly agentic or weakly so, but they will be important and cannot be neglected. They are the negotiated foundations that progress activity. Chris and his boss are constructing and developing their relationship as an important aspect of their work. What would outwardly appear as a relationship based on negative interpersonal interaction, characterised by disrespect and fear, is nevertheless being harnessed (at least by Chris) in a way that supports his learning.

Third, in terms of agency as transformation, all changes are significant, but the level of significance remains problematic as individuals grapple with the meanings and consequences of their work and learning experiences. For example, some changes may or may not prove worthy of the term transformation (as when its meaning is restricted to grand outcomes such as altered world views or the reconceptualisation of circumstances – as might be proposed by the learning theories of Mezirow (2000) and Argyris and Schon (1978). However, the significance of seemingly less impactful and incremental change (as varied perception, amended practice, adjusted artefact, enhanced involvement, etc.) and the movements or transitions that accomplish these changes need to be considered and evaluated within the range of transactions that constitute work and learning. For individual workers, among the many issues that considerations of change can generate, two are important here. First, what is transition and, particularly, what is successful transition within an occupational-performance perspective that typically views work-learning transformation as a measurable shift from one kind of thing or state to another (e.g. novice to expert, unskilled to skilled, outside to insider, employee to organisational representative, etc.). Second, how and by what criteria do individuals identify, define and evaluate the significance and value of the changes they experience, both as changes initiated and changes imposed (with all the creative, reactive and adaptive tensions these enable). Such considerations are necessary aspects of seeking to understand learning in and for work.

Chris is in transition. He is transforming, becoming something and someone different – faster, more accurate and understanding of what he does. Yet his focus, his agenda, is, as he describes it, “now and how to get that right”. This immediacy is his measure of his performance and the incremental nature of his improvement. Granted, he is a new employee, so such immediacy could be expected to drive his work and learning as almost everything he does in his work is new to him and he has only been at work for a few weeks. However, at any given moment in this precarious employment, particularly at those moments when his boss is “going off”, his transformation in the transition to becoming a more capable worker is simultaneously complete and unfolding. It is complete in that he has learned, like others before him, that he could lose his job at any moment; that a good worker avoids reprimand; that his boss is emotional, unpredictable and abusive; and that all of these elements of his work are resources he can now manage more effectively because he is no longer who he was when he first arrived. And it is unfolding, in that he is yet to find who

he will become after greater experience in the job. He is being transformed, and this transformation acts as impetus to the transition he is enacting in work.

Further, Chris's transition and transformation is not some homogeneous and linear trajectory into a contextually defined future. Rather, it is a complex set of relationally interdependent minor and major transformations across numerous contested domains of being (e.g. identity-subjectivity, practice-place, power-position, etc. – Lave and Wenger 1991; Colley et al. 2003; Fenwick 2008). The various degrees of influence each of these transformations have in the enactment of his transition are his to explain. Yes, the boss "going off" is important, but not so important that Chris gives him his full attention. More important is allowing the boss to vent and Chris being seen to be humbled by the experience. This realisation marks a significant personal transformation. Chris is freed to transform the time from one of waste to one of performance enhancement. And so Chris's personal transformation progresses in a range of complementary transformations that characterise him and numerous aspects of his work. For example, the boss is being transformed – he is now slightly less intimidating than he was. His work practice is being transformed – interruptions (even those created by the boss) do not have to mean less work. And the context of his work is transforming – just because you packed what the customer wanted does not necessarily mean they will be satisfied. And so on.

As obvious as it may seem, change changes things, and so the kinds and qualities of change that mediate work need to be identified, differentiated and monitored as agentic forces that enhance and hinder learning. From a constructivist perspective that views learning as the socio-personal practice of participation in activity, Chris's work-learning experiences may be seen as predicated on the qualities of his engagement in the range of tasks and relationships that constitute his work. From an agency perspective that views learning as enhanced when engagement is purposeful and supported, Chris's work-learning experiences may be seen as predicated on his capacities and willingness to participate and accept the opportunities available. However, such a view does not enable and accommodate the broader perspective of agency that this chapter has sought to outline. Personal agency is more than the enactment of sets of capacities and desires that reside within the interactions enabled in work when enthusiastic and confident workers meet opportunity for development or problems that need to be overcome. Such views promote the concept of agency as property and emphasise the need of enacting more and better properties as the basis of improved learning and development. The broader perspective outlined in this chapter suggests that personal agency, as it can be examined in work as a foundation of learning, is more complex, incremental and relationally nuanced than any single perspective can accommodate. The three aspects of agency proposal outlined here seek to advance the mediation and socio-personal enactment perspective and support notions of individuals as managers of the mediations that comprise their activities. The extent to which workers manage the numerous properties, relationships and transformations they live and encounter is necessary of consideration when examining learning and work and the agency from which they are emergent. Such understandings of agency may be conceptualised as epistemological agency.

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Chapter 5

Human Agency at Work: Towards a Clarification and Operationalisation of the Concept

Michael Goller and Christian Harteis

5.1 Introduction

Human agency is a commonly used concept in the literature on workplace learning (Goller 2017; Tynjälä 2013) that has been associated with—amongst other aspects—individuals’ development of professional knowledge, skills, and abilities (e.g. Billett 2011; Eraut 2007; Harteis and Goller 2014), individuals’ (re-)negotiation of work identities (e.g. Eteläpelto et al. 2014; Vähäsantanen 2013), as well as individuals’ contribution to transformations of occupational practices (Billett 2006, 2011). Across these accounts, human agency is used to explain that individuals make choices and act on these choices that affect their life courses as well as their environments (see also Eteläpelto et al. 2013). In more general terms, human agency describes how human beings are agents of influence who are able to cause things and to bring about change (Bunnin and Yu 2004; Schlosser 2015; Shanahan and Hood 2000).

Unfortunately, empirical research focussing on the concept of human agency is still scarce. Only a few empirical studies have investigated the role of human agency in professional learning and development processes (e.g. Bryson et al. 2006; Fox et al. 2010; Hökkä et al. 2012; Smith 2006; Vähäsantanen et al. 2009). Using qualitative research methods, these studies found evidence that (some) individuals indeed exercise agency at work and that human agency is strongly linked to learning and development. However, due to the methods applied in these studies, their findings are only based upon rather small numbers of participants and cannot—because of their design—be easily generalised beyond the specific samples. Quantitative studies that aim to validate and generalise these exploratory findings using larger samples and hypothesis-testing methods are still lacking.

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The lack of quantitative studies might best be explained by the vagueness and abstractness of the agency discourse within the literature on workplace learning (Eteläpelto et al. 2013; Goller 2017). Many authors use the concept of human agency without providing an explicit definition (e.g. Billett 2006; Eraut 2007; Skår 2010). Without such a definition, however, it is not possible to operationalise a theoretical construct (Jaccard and Jacoby 2010). The aim of this chapter is therefore to propose a conceptualisation and definition of human agency that can be used to operationalise the construct in quantitative empirical studies. This will be done by using not only literature on workplace learning but also literature on social-cognitive psychology, life-course research, and organisational behaviour. All three latter research strands are genuinely interested in notions of human agency, derived nomological networks of antecedents and outcomes of human agency, and have already generated a large set of empirical findings concerning these nomological networks. In addition, these literature strands were found to be well integrating and complementing with the literature that originated in the workplace learning community by discussing human agency in relation to individuals' development in general or individuals' action within work contexts (see Goller 2017).

This chapter is structured as follows. The second section discusses human agency from two conceptually different perspectives: (a) agency as something individuals do and (b) agency as a personal feature of individuals. Both perspectives are then incorporated into a larger framework including situation-specific context factors. Section 5.3 sets out to further concretise human agency. By drawing on literature originating in social-cognitive psychology, life-course research, and organisational behaviour, three distinct components of human agency are derived. The results of this theoretical discussion are then used in Sect. 5.4 to propose an operational definition of human agency that may be used in a range of empirical studies employing hypothesis-testing methods. The chapter closes with a short discussion of the main arguments as well as a final conclusion.

5.2 Conceptualisations of Human Agency

Goller (2017) reviewed the literature discussing the role of human agency in the development of work-related knowledge, skills, and abilities. All discourses covered in this review emphasised the importance of human agency to explain how individuals learn and develop in work contexts. Based on this review, he identified two different idealised perspectives on agency within the discussions (agency as something individuals do and agency as a personal feature; see below). Those conceptual perspectives are not necessarily addressed by the different authors in their writings (see also Tynjälä 2013). They are, rather, implicit themes that emerge based on how human agency is used within the respective research agendas and theories. In fact, only a few authors (e.g. Eteläpelto et al. 2013; Lipponen and Kumpulainen 2011) describe an explicit understanding of agency that clearly indicates which of the two perspectives is employed in their studies. Furthermore, some authors

incorporate elements of both perspectives in their notions of human agency (e.g. Billett and Smith 2006). It is therefore important to understand that the distinction into two separate perspectives is predominantly meant to be an analytical tool to understand the abstract discussion about human agency rather than a rigid framework to classify existing theoretical accounts.

Authors who mainly adopt the *first perspective* describe human *agency as something that individuals do* (e.g. Eteläpelto et al. 2013; Vähäsantanen 2013). Human agency within these writings is discussed as being manifested when individuals make choices and act based on these choices. In other words, human agency is about decisions and actions in life. These decisions and actions are then argued to be related to certain kinds of outcomes like changes in work practices, transformations of an individual's identity, or the development of knowledge and skills. By adopting this perspective, Eteläpelto et al. (2013) proposed the following definition of human agency in work contexts: "Agency is practiced when professional subjects and/or communities exert influence, make choices and take stances in ways that affect their work and/or their professional identities" (p. 61). Typical examples of such agentic actions are when individuals proactively seek feedback and information at work (see Goller and Billett 2014; Harwood and Froehlich 2017, this volume), propose new and creative work methods or procedures (see Billett 2006, 2011; Messmann and Mulder 2017, this volume; Kreuzer et al. 2017, this volume; Wiethe-Körprich et al. 2017, this volume), deliberately work with others in order to reach some shared goals (see Edwards et al. 2017, this volume; Kerosuo 2017, this volume), as well as proactively seek out new experiences at work (see Goller and Billett 2014). It should be noted that agentic actions are not necessarily observable. The concept also includes behaviours that might not be easily observed from external perspectives (e.g. reflection).

The *second perspective* conceptualises human *agency more as a personal feature of human beings* (e.g. Bryson et al. 2006; Eraut 2007, 2010; Harteis and Goller 2014). Agency is discussed as something (i.e. an antecedent, a prerequisite, or a disposition) that allows individuals to make choices and to engage in actions based on these choices. Incorporated in this perspective is the idea that some individuals engage more often in agentic actions than others. Harteis and Goller (2014) describe this notion with a hypothetical continuum stretching between two opposing extreme points: agentic and non-agentic individuals (see also Goller 2017; Little et al. 2006). Agentic individuals frequently exercise agency and therefore actively take control over their lives and their environments. In contrast, less or non-agentic individuals tend to react and to comply with external conditions and therefore do not actively take control over their lives and environments or do so less often. This does not necessarily mean that non-agentic individuals do not "possess" agency. It rather means that agentic individuals utilise their agency "with greater facility" (Hitlin and Elder 2007, p. 183) in comparison to their less agentic counterparts. A summary of both conceptualisations can be found in Table 5.1.

These perspectives are not necessary incompatible. In fact, both conceptions can be combined into a single theoretical framework. For this purpose, it is necessary to assign different labels to each conceptual perspective. Within this chapter, the first

Table 5.1 Two conceptual perspectives of human agency

Agency as something individuals do	Agency as a personal feature
Decisions and actions	Prerequisite to engage in agentic actions
Self-initiated, goal-directed behaviour	Antecedent of self-initiated behaviour
Mainly situation specific	Relatively stable tendency or disposition

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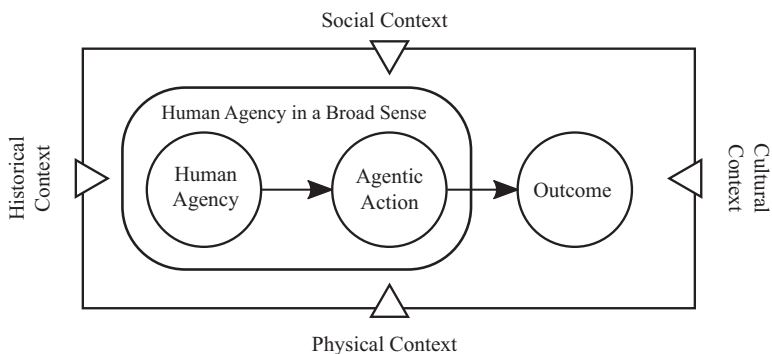


Fig. 5.1 Theoretical framework combining both conceptualisations of human agency (Reprinted and adapted from Goller (2017, p. 87) with permission from Springer VS)

perspective will be referred to as agentic actions. *Agentic actions* describe all kind of *self-initiated and goal-directed behaviours that aim to take control over the work environment and/or the acting individual’s life*. The second perspective will be labelled as human agency (in a narrow sense). *Human agency* is then defined as the *capacity and tendency to make intentional choices, to initiate actions based on these choices, and to exercise control over the self and the environment*¹ (see also Eteläpelto et al. 2010; Harteis and Goller 2014). Within this definition human agency is conceptualised as a disposition. A disposition is an individual characteristic that “determines the a priori probability of adopting a particular goal and displaying a particular behaviour pattern” (Dweck and Leggett 1988, p. 269). Put differently, agentic individuals are a priori more inclined to engage in agentic actions than less or non-agentic individuals. Human agency—in this sense—is therefore understood as an antecedent of agentic behaviour that (might) eventually lead to certain kinds of outcomes. A graphical depiction of this framework can be found in Fig. 5.1.

¹This definition is largely compatible with the definition proposed by Eteläpelto et al. (2013). However, Eteläpelto et al. (2013) do not conceptualise agency as a tendency and disposition but rather as something individuals’ do. The definition proposed in this chapter therefore shifts the focus more towards human agency as a personal feature by still being grounded within current discourses of the workplace learning literature.

It is important to note that the proposed framework and definitions do not deny that human agency (in a broad sense) can be understood either as a personal feature or as something individuals do. An attempt was made to combine both perspectives within a single framework. The two different labels (human agency in a narrow sense and agentic actions) have been assigned because of purely analytical reasons, in other words, to distinguish both perspectives within the proposed framework. Other authors might choose to refer to agentic actions as human agency and the personal feature that allow individuals to act agentially as something completely different. This is legitimate. However, it is important that authors make clear what understanding of human agency is used in their writings to avoid further confusion about the concept.

To this point, human agency has been exclusively discussed from an individual perspective. It is, however, important to note that neither of the discussed perspectives conceptualises human agency as something independent from *social, cultural, historical, and physical contexts*. In contrast, all authors profoundly acknowledge that human agency can only be understood in relation to the social and material world—that is, the concrete circumstances an individual faces in everyday life. All choices and actions are always influenced by what a particular context (e.g. a workplace) affords or denies its participants (Billett 2001, 2006, 2011). Such affordances or constraints are directly related to social, cultural, historical, and physical context factors (Eteläpelto et al. 2013; Elder and Shanahan 2007; Shanahan and Hood 2000; Tornau and Frese 2013).

Theoretically, context factors can be understood to alter the a priori probability of whether an individual tends to engage in an agentic action or not (see also Dweck and Leggett 1988). Some factors might inhibit the exercise of human agency, whilst others might encourage individuals to adopt an agentic behavioural approach. For instance, one supervisor might strongly constrain an agentic individual's tendency to address tensions at work in his or her department, whilst another might strongly encourage employees—even less agentic ones—to do so. Context factors might also affect individuals' general inclination to exercise human agency in the first place. For instance, some individuals might not have had the chance to develop the competences and inclinations to make decisions and to translate those decisions into action plans (see next section). Such individuals are less likely to exercise agency than individuals who have had the chance to develop such individual features from early on. And finally, context factors also influence the consequences of agentic actions. Some circumstances make it easier to achieve intended goals than others. Put differently, the outcome of a particular agentic action might not always be the intended one because of context factors that are not within the realm of the acting individual (see also Giddens 1984). For instance, a highly competent and qualified individual might agentially apply to a wide range of potential employers but not get a job because of an ongoing economic recession. Due to this reasoning, Fig. 5.1 depicts the chain of human agency, agentic actions, and outcomes as being embedded in the social, cultural, historical, and physical context. A more detailed discussion about the effect of context factors on human agency can be found in Goller (2017).

5.3 Three Facets of Human Agency

The previous section argued that some individuals engage more often in agentic actions than others. The differences between those individuals have been attributed to their capacity and tendency to make intentional choices, to initiate actions based on these choices, and to exercise control over the self and the environment (i.e. human agency as a personal feature). However, this definition does not yet explain exactly why some people are more capable and inclined to engage in agentic actions, whilst others are not. The aim of this section will therefore be to introduce three components that are suited to explain these differences: (a) agency competence, (b) agency beliefs, and (c) agency personality. Each component is strongly associated with a range of psychological mechanisms that have been discussed as relevant with regard to human agency within the literature on social-cognitive psychology, life-course research, and organisational behaviour. The next sections will shortly discuss each of these components.

5.3.1 Agency Competence

By exercising agency human beings always attempt to take control over their lives or the environment(s) of which they are part. Such efforts require individuals to engage in a process of self-regulation by coming up with goals, making decisions in favour of or against those goals, translating these decisions and goals into feasible action plans, constantly evaluating their own progress, and persisting in the face of challenges and obstacles. Differences in the ability to do so might therefore explain why some individuals exercise their agency more often than others.

In a very *first step*, individuals have to generate desired goals (Parker et al. 2010). Such goals are nothing other than cognitive representations of possible future selves or conceivable environmental states (Bandura 2001; Grant and Ashford 2008; Hitlin and Elder 2007; Cross and Markus 1991). They are concrete ideas about what kind of person one wants to be or how one's environment (e.g. the workplace) should look in the future. These cognitive representations of desired future states work as motivators that help to energise and direct actions regardless of current circumstances (Grant and Ashford 2008; Locke and Latham 2002). It is exactly this mechanism that "enables people to transcend the dictates of their immediate environment and to shape and regulate the present to fit a desired future" (Bandura 2001, p. 7). In relation to more sociological discussions, these ideas can be interpreted as a temporal dimension of human agency (see Emirbayer and Mische 1998; Eteläpelto et al. 2013; Kristiansen 2014; Marshall 2005).

It is not only important, however, to be able to cognitively represent possible futures. Clausen (1991) emphasises that individuals have to be able to come up with goals that match their personal strengths and preferences. Only if individuals recognise and know about their own strengths and weaknesses as well as preferences can

they avoid committing to goals that are unrealistic or just generally ill-fitting. It therefore follows that agentially competent individuals should (a) know themselves better than their less competent counterparts as well as (b) be able to generate and decide about desired goals that are strongly based upon this knowledge.

In the *second step*, decisions and goals have to be translated into concrete and feasible action plans (Bandura 2001, 2006; Clausen 1991; Grant and Ashford 2008; Shanahan and Elder 2002). This requires the individual to break down more general and distal goals into a hierarchically structured system of sub-goals. Such proximal sub-goals are much more likely to enfold their potential to motivate the individual to act (Bandura 2001, 2006). Distal aspirations are often too abstract to be translated into step-by-step action plans and thereby possess less motivational potential. Action plans describe concrete strategies to meet each of the single sub-goals that have been derived by the individual (Grant and Ashford 2008). This can be done by anticipating potential outcomes of possible actions and consequently selecting the one(s) that are most likely to produce the desired outcomes connected to lowest possible costs (Bandura 2001).

In the *third step*, the individual has to implement his or her action strategy and constantly monitor whether the chosen behaviours indeed contribute towards the achievement of the sub-goals as well as the more distal desired future state (Bandura 2001, 2006). Especially in the face of obstacles and challenges, individuals need either to exhibit persistence or to find new strategies to handle the encountered problems (Pintrich 2005). In addition, individuals also have to resist the momentary urges and needs that are not in line with the chosen long-term goals (Baumeister and Vohs 2007, 2012). Successful regulation includes either the postponement or negligence of such distractions.

To sum up, human beings are more likely to engage in self-initiated and goal-directed behaviours if they are able to visualise desired future states, to set goals based on these states, to translate these goals into actions, to engage in these actions, and to deal with problems that might occur. This requirement of human agency will be subsumed under the concept of *agency competence*. Agency competence—that is, the competence to initiate and engage in agentic actions—is assumed to be the first crucial component of human agency as a personal feature.

5.3.2 Agency Beliefs

The ability to make choices, to engage in agentic actions, and to persist in the face of obstacles is not sufficient to explain why some individuals exercise more agency than others. Some individuals might indeed be agentially competent but still do not engage in any agentic actions. One possible reason for this phenomenon is the absence of agency beliefs—that is, an individual's subjective perception about whether or not she or he has the abilities to exercise agency.

A central assumption of Bandura's (2001, 2006) social-cognitive theory is that human beings are inherently able and inclined to reflect upon their own capabilities

to initiate actions and to exercise control over their life and environment. In his opinion, human beings generally examine whether they are capable of successfully executing the behaviour in question and whether they are likely to produce the targeted outcome before engaging in any kind of action (Bandura 1977, 1986; Parker et al. 2010; see also, for a more general discussion of such control beliefs, Skinner 1995, 1996). Based on this argumentation, it is necessary to possess not only the abilities to exercise agency but also the beliefs in oneself to do so in the first place. For “[u]nless people believe they can produce desired results and forestall detrimental ones by their actions, they have little incentive to act or to persevere in the face of difficulties” (Bandura 2001, p. 10). Such kinds of expectations are summarised in the concept of (self-)efficacy beliefs.

A range of studies has found empirical evidence that self-efficacy beliefs are indeed positively related to self-initiated and goal-directed behaviour. For instance, strong self-efficacy beliefs significantly and positively predict job search behaviour (Kanfer et al. 2001), a range of work-related agentic actions (e.g. career-related choices, propensity to change processes at work) and behavioural intentions (e.g. considering career choices) (Sadri and Robertson 1993), as well as college major choices and the utilisation of development-related situations (Lent and Hackett 1987). In addition, evidence exists that individuals with strong self-efficacy beliefs tend to set higher goals and are able to persist more often in the face of challenges than individuals who are less strongly convinced of their abilities to engage in agentic actions (e.g. Bandura 1977, 1978, 1986; Multon et al. 1991; Schunk 1981).

Self-efficacy beliefs are conceptualised as a malleable concept (Bandura 1977, 1982, 1986; Gist and Mitchell 1992). In other words, existing self-efficacy beliefs can both develop and deteriorate. Bandura (1986) suggested four different factors that determine such development processes: (a) mastery experiences (i.e. own experiences), (b) vicarious experience (i.e. experience of other people), (c) verbal persuasion, and (d) physical arousal like anxiety. Mastery experiences—in the sense of performance accomplishments—have been described as the most important factor of these four (Bandura 1977; Gecas 2003). Individuals who have experienced themselves as highly effective in engaging in certain kinds of behaviours within particular contexts in the past are more likely to engage again in those tasks in the future. At the same time, individuals who have not had such experiences are more likely to feel powerless and helpless (Gecas 2003; Seligman 1972, 1992). Such a sense of inefficacy is the reason why those individuals tend not to initiate agentic actions in the first place.

Judgements about one’s own self-efficacy are not necessarily accurate. Some individuals tend to underestimate and some to overestimate their abilities to engage in particular behaviours. Bandura (1986, 1997) argues that self-efficacy beliefs that are slightly above real abilities are desirable. Individuals who slightly overestimate their abilities tend to initiate actions they are not yet able to do. This might then lead either to failure because of incompetence or to success by chance. Either way, both kinds of experiences offer the potential to acquire knowledge and skills to successfully engage in the same or a similar action in the future (Bandura 1997; Linnenbrink and Pintrich 2003; see, for a discussion on the value of negative knowledge based

on mistakes, Oser et al. 2012). At the same time, however, it has to be emphasised that repeated failure can easily lower individuals' self-efficacy beliefs and therefore also reduce the likelihood of engaging in the behaviour in question in the long run (Bandura 1986; Schunk and Pajares 2009).

To sum up, individuals who strongly believe in their abilities to engage in self-initiated and goal-directed behaviour are more likely to exercise their agency than individuals who do not have such beliefs. *Agency beliefs*—that is, individuals' personal perceptions of whether or not they have the abilities to engage in agentic actions—are therefore hypothesised to be another crucial component of human agency.

5.3.3 Agency Personality

Both agency competence and agency beliefs cover only whether an individual is able to engage in agentic actions and whether an individual believes to actually have those abilities. In the terminology of Parker et al. (2010), both facets can be described as “can do” motivational states. Such “can do” states are necessary but not sufficient to explain why some individuals engage in agentic behaviours, whilst others do not. Individuals also require a *reason to do so* (Parker et al. 2010). Reasons to engage in self-initiated and goal-directed behaviours are endlessly manifold. They range from the fulfilment of pressing needs, through expectations that the behaviour in question is connected to a more distal kind of desired outcome, to expected joy over the action itself (e.g. Deci and Ryan 2000; Ryan and Deci 2000). Many of these reasons are specific either to a certain situation an individual is in or to a certain behaviour that an individual might plan to initiate. However, Sect. 5.2 defined human agency (in a narrow sense) as a general tendency or disposition to initiate goal-directed actions to take control over the self or the environment. This definition therefore requires a stable and situation-unspecific reason to engage in such behaviour that differs across individuals. In other words, this definition calls for an agency personality trait (Pincus and Ansell 2013).

Within the organisational behaviour literature, notions of human agency have been mostly discussed under the concept of proactivity—that is, all kind of “self-starting, future oriented behaviour that aims to bring about change in one's self or the situation” (Bindl and Parker 2011, p. 567; see also Grant and Ashford 2008; Parker and Bindl 2017; Parker and Collins 2010; Tornau and Frese 2013). Within these discussions, two conceptualisations of an agency-related personality trait were developed: *proactive personality* and *personal initiative personality*. Proactive personality is defined as “a personal disposition toward proactive behavior, defined as the relatively stable tendency to effect environmental change” (Bateman and Crant 1993, p. 103), whilst personal initiative is defined as “a behaviour syndrome that results in an individual taking an active and self-starting approach to work goals and tasks and persisting in overcoming barriers and setbacks” (Fay and Frese 2001, p. 97). Both concepts are conceptually very similar, and Fay and Frese (2001) as

well as Tornau and Frese (2013) found evidence that this conceptual overlap can also be confirmed empirically.

A range of studies used either proactive personality or personal initiative personality as an antecedent of a variety of different agentic actions like initiating constructive change at work, making constructive suggestions for change, seeking work-related feedback or information, professional networking, or managing one's own career (e.g. Parker and Collins 2010; Seibert et al. 2001; Thompson 2005). Two recent meta-analyses found strong evidence that individuals with an agentic personality trait are indeed more often engaged in such kinds of agentic actions (Fuller and Marler 2009; Tornau and Frese 2013). Another study showed that proactive personality is positively and significantly related to the motivation to learn (Major et al. 2006). Maybe most interestingly, this study also showed that proactive personality explained significantly more variance in the motivation to learn than the most widely accepted comprehensive model of personality (i.e. the Big Five: Costa and McCrae 1992). In other words, evidence was found that a trait-like tendency to act agentially exists and it cannot be completely explained by existing personality dimensions like extroversion, openness to experience, neuroticism, agreeableness, and conscientiousness.

Desire for control has been discussed as another plausible personality trait that explains differences regarding individuals' tendency to exercise agency (e.g. Ashford and Black 1996; Crant 2000; Parker et al. 2010; Wrzesniewski and Dutton 2001). The concept can be defined as a relatively stable inclination of a person to take control over events in her or his life (Burger and Cooper 1979) and is conceptually related to White's (1959) idea of effectance motivation. The empirical study of Ashford and Black 1996 found evidence that newcomers in organisations, with a strong desire for control, tend to more often intentionally seek information, deliberately socialise with new colleagues, and actively expand their professional network than newcomers with a less strong desire for control. The advantage of the concept of desire for control in comparison to proactive personality or personal initiative personality is that it explains why exactly individuals tend to act agentially: because they have an innate *need* to control their environments and their life courses. Both earlier discussed personality traits rather define the trait by its behavioural tendency alone.

To sum up, empirical evidence exists that differences between individuals' tendency to exercise their agency can be traced back to differences in their personality. It is exactly such an agentic personality that causes individuals to engage in agentic actions. Agency personality will therefore be defined as the stable and comparably situation-unspecific inclination to make choices and to engage in actions based on these choices with the aim of taking control over one's life or environment (see also Goller 2017). Agency personality is hypothesised to be the third and last component of human agency as a disposition.

5.4 Modelling and Operationalising Human Agency as a Multifaceted Construct

Three distinct components as well as associated psychological mechanisms have been proposed to explain why some individuals engage more often than others in self-initiated behaviours aiming to take control over their selves and the environments: (a) agency competence, (b) agency beliefs, and (c) agency personality. It is now suggested that these components can be used to model and operationalise human agency. A graphical representation of this model can be found in Fig. 5.2.

The three components are understood as different facets of human agency that equivalently predict why one person tends to engage in agentic actions and why someone else does not. In this sense, human agency is modelled as a more distal and global predictor of human behaviour (Kanfer 1990, 1992). It is assumed that individuals who are agencially competent, who believe in their agency competences, and who feature a strong agency personality tend to—*on average*—take more often control over their lives and their environment in a large range of situations than individuals without these characteristics. However, theoretically it has still to be acknowledged that situation-specific circumstances (i.e. social, physical, cultural, and historical context factors; see Sect. 5.2) might alter the a priori probability that an individual will actually engage in any kind of particular agentic action during his or her life course. It can therefore not be expected that a measure of human agency based on this conceptualisation will result in perfect accuracy to predict agentic behaviours in an empirical study. However, it is hypothesised that it should explain a significant amount of the variance of goal-directed and self-initiated behaviours of individuals who aim to take control over their lives and their environments.

First evidence for the validity of the proposed model of human agency was presented by Goller (2017). He used the three facets to operationalise human agency as a formative latent second-order construct. In a first step, each of the facets was measured with five reflective indicators. The employed measures (agency

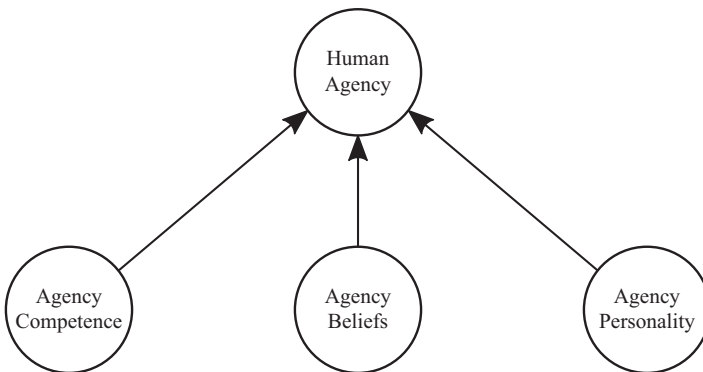


Fig. 5.2 Human agency as a personal feature operationalised with three facets: agency competence, agency beliefs, and agency personality

competence, self-developed scale; agency beliefs, work-specific self-efficacy beliefs, adapted items from Schwarzer and Jerusalem 1995; agency personality, need for control in work settings, adapted items from Jacobi et al. 1986) exhibited sufficient psychometric qualities including discriminant validity. In a second step, human agency was then latently measured as a linear combination of these three facets (Bollen and Lennox 1991; Jarvis et al. 2003) within a variance-based structural equation modelling approach (Esposito Vinzi et al. 2010; Hair et al. 2014). In his study, Goller (2017) could show that this agency measure significantly and positively predicted geriatric care nurses' engagement in different agentic actions: deliberate participation in institutionalised learning activities like training; deliberate crafting of new experiences at work, deliberate enquiry of codified information through reading journals, books, or web resources; and deliberate efforts to initiate constructive change at work. This result remained robust across two different samples ($n_A = 432$; $n_B = 447$). Human agency explained between 7 and 27% of the variance of these agentic actions in the first and between 16 and 39% in the second sample. In addition, it could be shown that some of these agentic actions were significantly and positively related to a measure of expertise. The findings of Goller (2017), therefore, speak much in favour of the theoretical framework proposed in Sect. 5.2 as well as the predictive value of the three facets proposed in this as well as the last section.

It is important to note that human agency as conceptualised and modelled in this chapter is something that can—in part—be developed. Both agency competence and agency beliefs are defined as malleable facets of human agency. Only agency personality is assumed to be rather stable and immutable. Individuals who lack agency competence can attempt to increase their knowledge about themselves as well as to improve their abilities to make decisions, to break down goals into sub-goals, and to come up with feasible action plans that help to meet these sub-goals. This can be done by taking part in designated training, coaching, supervision or counselling sessions, as well as a range of other intraspective activities (e.g. Jack and Smith 2007; Kombarakaran et al. 2008; Mensmann and Frese 2017; Wilson and Dunn 2004). Similarly, agency beliefs can be developed through therapeutic sessions and designated trainings, as well as upcoming mastery experiences (Bandura 1986; Gecas 2003; see also Eden and Aviram 1993; Gist 1989; Gist and Mitchell 1992). It therefore follows that societies or even single employing organisations that highly endorse individuals' attempts to take charge of their lives as well as of their environments are advised to offer access to corresponding development opportunities. A description and discussion of such a development opportunity aiming at the promotion of human agency within professional contexts can be found in Vähäsantanen et al. (2017, this volume).

5.5 Summary and Conclusion

Although the term human agency has been commonly used within the workplace learning literature, empirical research, including the concept and which employs hypothesis-testing methods, is still largely lacking. One reason for this absence of research might be found in the rather abstract and vague discussion about human agency that has not yet come up with an operational definition of the concept. The aim of this chapter therefore has been to define agency in such a way that it can be operationalised for use in prospective empirical studies.

In a first step, this chapter proposed that two different notions of human agency are used in the workplace learning literature. The first notion describes agency as something individuals do: Exercising human agency is always connected to individuals' choices and actions that aim to take control over their life or their environments. In contrast, the second notion conceptualises human agency as a personal feature of human beings that allows them to make these choices and to engage in actions based on those choices. In this sense, the second notion describes human agency as an antecedent of the choices and actions that are part of the first notion. It was therefore proposed that both notions can be integrated into a single theoretical framework. For this purpose, human agency (in a narrow sense) was defined as the capacity and tendency to make intentional choices, to initiate actions based on these choices, and to exercise control over the self and the environment. Concrete choices and actions that are a result of this capacity and tendency are described as agentic actions. Agentic actions are defined as all kinds of self-initiated and goal-directed behaviours that aim to take control over the work environment and/or the acting individual's life.

It is important to note that this distinction between human agency and agentic actions is explicitly not meant to say that scholars who adopted the first notion (i.e. agency as something individuals do) are incorrect in describing their perspective as human agency. It is rather used to distinguish both perspectives and to incorporate them into a single framework within this contribution. In addition, the proposed distinction might help scholars from different backgrounds to discuss more concretely their specific understanding of human agency by referring to either or both notions.

In a second step, it was proposed that the capacity and tendency to exercise agency can be modelled with three components: agency competence, agency beliefs, and agency personality. Individuals who are agentially competent, who believe in their abilities to engage in agentic actions, and who are inclined to take control over their self and their environment are hypothesised to exercise their agency more often than individuals who do not feature those characteristics. Based on this argumentation, it was suggested that these three components can be interpreted as facets of human agency that are suited to operationalise the concept.

A first study by Goller (2017) that employed these three facets to operationalise human agency in the context of work was briefly introduced. The study found early evidence about the predictive value of such an agency measure in the domain of

geriatric care nursing: Human agency was positively and significantly related to a range of different self-initiated and goal-directed behaviours. However, it is still completely unclear whether the measure exhibits similar predictive qualities in other domains or with other agentic actions than the ones used in the study. It would therefore be interesting to employ the proposed agency measure in studies that, for instance, also measure individuals' intrapreneurship behaviour (see Kreuzer et al. 2017, this volume; Wiethe-Körprich et al. 2017, this volume). In addition, it would be interesting to investigate the relationship between this measure and measures of proactive personality (Bateman and Crant 1993), personal initiative personality (Fay and Frese 2001), or Raemdonck et al.'s (2017, this volume) concept of self-directedness. Self-directedness is defined as an inclination to "self-direct work-related learning processes, that is to steer and take responsibility in diagnosing learning needs and setting goals, choosing and implementing appropriate learning strategies and evaluating and adjusting the learning process" (Raemdonck et al. 2017, this volume p. 402). In this sense self-directedness can be interpreted as an agentic approach towards work-related learning. The proposed measure of agency should be empirically related to all three of the named concepts.

It is hoped that the proposed conceptualisation of human agency as well as its operationalisation promotes new empirical studies concerned with this phenomenon. In general, it would be highly desirable if research on workplace learning conceptualises and operationalises key concepts in such a way that hypothesis-testing methods can be applied. The employment of hypothesis-testing methods helps to further clarify the role and relevance of highly debated concepts for the explanation of learning and development processes in work contexts. In addition to qualitative research, they help to generate more generalisable findings about how phenomena like human agency are suited to explain the development of work-related knowledge, skills, and attitudes beyond a particular sample.

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Chapter 6

Expanding the Notion of Agency: Introducing Grit as an Additional Facet of Agency

Hye Won Kwon

6.1 Introduction

Sociology has long had a fundamental interest in the sources of human action: what makes an individual behave in a certain way in a certain situation? The classic approach argued that norms and values are primary determinants of human action. That is, shared values, beliefs, norms and meaning systems motivate people to act in a certain way (Geertz 1973; Parsons [1951] 2013; Weber [1904–5] 2002). However, this view of human behaviour is criticised for its lack of focus on human agency (Loyal and Barnes 2001) and its oversocialised concept of human nature (Wrong 1961). When theorists were confronted with the need to explain predictability of human action, they often failed to properly focus on agency. In sociology, agency is often treated as a secondary concern or even as a cumbersome error term that unnecessarily complicates the general pattern that underlies the influence of social structure on individual actions (Hitlin and Elder 2007). Classic organisational concerns like status achievement relied for too long on an overly simplistic conceptualisation of the actor.

As a reaction against this tendency of oversocialisation argument, a micro perspective directs our attention to agency and subjectivity; this is, in fact, one of the core tenets of life course studies (Shanahan and Macmillan 2008). People do not passively follow the line of actions given to them. Even though the choices available to them are often linked to social structure and culture that individuals are embedded in, people still make choices among those options (Hitlin and Long 2009). In this sense, how people frame the world and how they act and react to achieve their desired goals have social consequences (Emirbayer and Mische 1998); people do not mindlessly follow normative expectations. Scholars have presented much evidence that supports the crucial role of human agency in understanding the life

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course (see Hitlin and Kwon 2016; Hitlin and Long 2009; Shanahan and Macmillan 2008 for overviews). Individuals do not have complete freedom, however, and sociological treatments attempt to find a balance between normative patterns and individual volition. Such treatments have been partially informed by psychological, subjective measures (discussed below); agency is a useful term for bridging sociology and psychology, if the strengths of both disciplines are employed.

Building on recent attempts at theoretical and empirical clarity of agency as a sociological concept (i.e. the construct that is linked to constraints and opportunities shaped by social structures), this chapter argues for an additional behavioural facet of agency. Most of the dominant models involve subjective evaluations of one's own capacities, orientations that capture the mental portion of agency beliefs, but fail to measure behavioural predispositions despite the implicitly shared understanding among agency researchers that agency is basically exercised via actions initiated by individuals (e.g. Harteis and Goller 2014). This chapter gives a brief overview of existing agency research and suggests expanding the notion of agency to include a behavioural facet. The process of exerting agency is a bit beyond current scholarly foci of the field, almost fully focused on subjective beliefs about one's sense of control coupled with future-oriented expectations. Along this line, this chapter introduces relevant concepts that capture the behavioural facet of agency and elaborates why it is important to incorporate behaviour into our understanding of agency in an individual's life course, in particular, in the context of the professional achievement. In sum, this chapter argues to bring the sociological imagination to the study of grit, a psychological construct but one with almost no linkages to structural factors. In doing so, this chapter attempts to discuss the potential significance of the concept grit as a sociological variable that is constructed through social structural and cultural forces.

6.2 Agency as a Multifaceted Concept

Agency is still one of the most "slippery" and elusive concepts bringing confusion to social science research (Emirbayer and Mische 1998; Hitlin and Elder 2007). This may be because human agency relies upon an individual's integrated understanding about the self and the world, linking past to the future (Emirbayer and Mische 1998): this understanding includes one's past experiences and relevant outcomes, capacity as well as hopes, desires and fears about the future (Emirbayer and Mische 1998; Hitlin and Long 2009; Shanahan and Hood 1999). In this sense, agency may be more like a summary index that synthesises individuals' past experiences, their post-interpretation of those experiences, their views on and plans for the future, their judgement about one's capacity to carry through with those life goals and plans and their action to make something out of it. Scholars have attempted to disaggregate this concept of agency into multiple components to empirically explore how agency influences human life (Emirbayer and Mische 1998; Hitlin and Elder 2007; Hitlin and Kwon 2016). Despite this multifaceted nature of the concept of

agency, a vast majority of previous empirical studies under the umbrella term “agency” have largely revolved around the subjective sense of agency (Hitlin and Johnson 2015). This is somewhat surprising given the importance of behavioural force of agency has been implicitly highlighted by agency researchers (Harteis and Goller 2014; Shanahan and Hood 1999).

This chapter suggests that the concept of agency should include at least three components: First, an agentic person has a belief that she is the one who formulates her life course. She believes that she is responsible for her life outcomes. Second, an agentic person has the future in mind. How the person sees her future matters for agentic behaviours. Third, and surprisingly underutilised in the literature, an agentic person is capable of carrying through her life plans. From this perspective, those who think their life outcomes are due to external factors such as fate or luck and those who do not hold future-oriented perspectives could be considered as lacking in agency. In addition, people who are lacking of the capacity for putting consistent and persistent effort to pursue what they set their mind to but rather easily give up (e.g. is a “quitter”) could also be considered as lacking in agency. This chapter provides a brief review on the first two facets of human agency that previous literatures have established and then suggests turning attention to an additional, relatively unexamined third facet of agency important for understanding work and professional development. People’s beliefs about their occupational skills may explain only one part of the agentic process contributing to career attainment and success.

6.2.1 Subjective Agency: Control Beliefs as a Traditional Agency Concept

Hitlin and Long (2009) identify two dimensions of agency: objective and subjective. Objective agency (or structural agency) indicates the structural locations and resources available to individuals that constrain or enable exertion of control over one’s own life. People vary in the extent that they gain access to various economic, cultural and social resources they can utilise when making choices in their lives, and those in different social locations often are presented with different sets of life choices. Thus, the extent that one can exert any types of agency is profoundly contingent on one’s structural position in a society (Sewell 1992).

However, objective agency does not tell us the whole story of a career. Subjective agency (or individual agency) includes individuals’ beliefs about their power to exert influence on their lives. Subjective agency often overlaps with objective agency, but objective agency is not always perfectly correlated with subjective agency (Hitlin and Kwon 2016). One might have overly inflated beliefs about their capacity to overcome structural barriers, for example, or have little idea of the objective obstacles they will face during their occupational lives.

The subjective sense of agency has long been at the centre of agency research as scholars have focused on the subjective facet of agency when measuring agency

(Hitlin and Johnson 2015). In empirical literatures, the majority of sociological and psychological research has largely focused on subjective dimensions of agency, that is, a belief in the capacity to exert influence over life (Hitlin and Johnson 2015), using many different terms and empirical measures: self-efficacy (Bandura 1977; Gecas 1989), sense of control (Mirowsky 1995; Mirowsky and Ross 1991, 1998; Ross and Mirowsky 2002), internal locus of control (Rotter 1966), perceived control (Perry et al. 2001) and mastery (Pearlin et al. 2007).

Among these constructs, *self-efficacy* (Bandura 1977; Gecas 1989) is perhaps the most widely used construct across disciplines. Bandura's treatment of self-efficacy focuses more on what he called "efficacy expectation" which refers to the belief that a person has an ability to perform actions to create expected outcomes. This efficacy expectation is distinguished from "outcome expectation" which refers to one's belief that her behaviour will produce the expected outcomes (Bandura 1977). This is distinctive from other subjective agency concepts because the concept of self-efficacy emphasises domain-specific beliefs such as academic self-efficacy or social efficacy (Bandura et al. 1996), rather than a generalised belief by an individual about her power over life outcomes in general. Bandura is sceptical that a generalised belief is important, as compared to the influence that domain-specific beliefs have within that domain. For people who have strong occupational-efficacy beliefs, this perspective would expect making agentic decisions with regard to work-related matters but would have little relationship to a person's sense of efficacy in other domains.

Locus of control is another popular concept that has been mainly developed within psychological domains. Rotter (1966) introduces two complimentary loci of control; an external locus of control indicates a person's belief that the event is attributed to external factors such as luck, fate or powerful other's control, while, as an opposite construct, an internal locus of control indicates the belief by an individual that the event around her is contingent on her own action. Typically, people high in one belief are low on the other; people who feel that the outside world directs them also tend to feel little personal ability to influence their lives.

The subjective agency concept that is most frequently used in sociology is the *sense of control*. The sense of control is the belief that people can control their life outcomes (Mirowsky 1995; Mirowsky and Ross 1991, 1998). Individuals who have a higher sense of control feel responsible for their life outcomes, regardless of successes and failures, and do not attribute those outcomes to other people, luck or fate. This construct puts more emphasis on a person's mastery over life outcomes and is distinguished from Bandura's self-efficacy that highlights domain-specific expectation about one's capacity (Haidt and Rodin 1999; Hitlin and Long 2009). Empirically, the Sense of Control Scale developed by Mirowsky and Ross (1991) is based on the revision of Rotter's (1966) Locus of Control Scale. Mirowsky and Ross (1991) argue their measure improves on Rotter's, since having only statements claiming a lower sense of control or statements about a higher sense of control may produce biased results because previous studies have shown that older people and those with lower education tend to be related to the tendency to agree or disagree with the survey questions. For instance, the indexes composed exclusively of fatalistic statements

tend to overstate the gap in the sense of control between those with a higher education and those with a lower education (Mirowsky and Ross 1991, 2007).

The advantage of using the sense of control as a measure of subjective agency is found in its linkage with social stratification. This link between an individual's sense of control and social structural locations enables agency researchers to take into account objective resources that shape structural opportunities. Previous studies have shown that the belief that produces better life outcomes is not distributed randomly among people; it is associated with socioeconomic determinants. In particular, age, gender, race, education and income have been consistently reported as factors leading to higher levels of sense of control (Kraus et al. 2009; Mirowsky and Ross 1998; Ross and Mirowsky 2002; Ross and Van Willigen 1997; Schieman 2001; Schieman and Plickert 2008), which can in turn influence life course outcomes.

Subjective agency beliefs have social consequences: the subjective sense of control encourages deliberate effort and work engagement, which translate into better educational and occupational outcomes (Mirowsky and Ross 2007). A positive association between the subjective sense of control and achievement has been reported by multiple studies, finding that people with a higher sense of agency are more likely to achieve better educational outcomes such as higher GPAs in high schools and colleges (Gifford et al. 2006; You et al. 2011) and better educational and occupational attainment (Wang et al. 1999).

6.2.2 Future-Oriented Expectations: Bring Temporality Back to the Concept of Agency

Scholars have recently highlighted an additional aspect of agency: future-orientations/expectations (Hitlin and Johnson 2015; Mische 2009; Schafer et al. 2011). Criticising traditional concepts and measures of agency for failing to capture its temporal nature (Mische 2009; Schafer et al. 2011), several scholars have attempted to revive the future-oriented facet of cognition within the umbrella of understanding agency (Hitlin and Kwon 2016). Identifying the multifaceted concept of agency, Emirbayer and Mische (1998) argue for placing agency within the flow of time. According to their definition, agency includes an actor's consideration of situations in the past, future and present: agency is a "temporally constructed engagement by actors of different structural environments...through the interplay of habit, imagination, and judgment" (Emirbayer and Mische 1998, p. 970). How people see their future is an important factor that shapes people's daily decision-making over and above the classic focus on personal control. In this sense, hopeful, optimistic outlooks certainly motivate individual action (Mische 2009).

In line with this endeavour to bring temporality back to the notion of agency, optimism (Schafer et al. 2011), future projection/projectivity (Mische 2009) and future expectation (Hitlin and Johnson 2015) have been suggested as analytical constructs that capture agency's future-oriented dimension. Regardless of the actual

predictability of future expectation that one has, this future-oriented, forward-looking perspective does have a significant impact on one's actual behaviours and, ultimately, individual's life outcomes. For example, Morgan (2005) highlights the role of imagined futures in students' decision-making process that affects their current behaviours, arguing that students generally wish to orient their current behaviour to a long-run plan that is in their best interest. Examining class differences in time perspectives, O'Rand and Ellis (1974) show that people who have a more circumscribed notion of future (i.e. who have a short-term planning of future) tend to attain less advantageous life outcomes compared to those who engage in a long-term future planning. Perceptions and thoughts about future, therefore, have real impact on individual life outcomes.

The future-oriented dimension has been captured in the vast literature on expectations and aspirations, models relevant for studying professional development and occupational attainment, though rarely linked with discussions of the agentic individual. An earlier version of this research can be found in the Wisconsin Model of status attainment (Sewell et al. 1969, 1970) which highlights that having higher levels of educational and occupational aspirations contributes to better occupational attainment.

Another theoretical concept that taps into the future-oriented agency, with consideration of its life course dimension, is *planful competence* (Clausen 1991), demonstrated to have significant longitudinal influence (Shanahan and Macmillan 2008). Clausen (1991) highlights that looking ahead to adult years has strategic importance to individuals, showing that a large amount of the variance in occupational attainment is explained through adolescent competence, consisting of the capacity to generate and stick to long-term plans. Obtaining planful competence in adolescence provides a head start to those who have it by enabling them to make "well-thought out choices" from the very early stages that leads to higher chances to develop better educational and occupational careers over the life course. For example, an individual who can clearly articulate her future career plans may be motivated to make intentional choices related to her work life (Harteis and Goller 2014), which in turn motivated to show desire and commitment to learn new skills and knowledge.

The future-oriented belief as a facet of agency, however, is theoretically and empirically distinct from objective agency or subjective beliefs about agency (Hitlin and Kwon 2016). Based on in-depth interviews with women in rural Malawi, Frye (2012) shows that Malawi's schoolgirls present unrealistically optimistic future expectation despite the severe structural limitations with which they are confronted (i.e. objective agency). Along with this optimistic view about their future, they believe that sustained effort will produce success and really make such efforts that may lead to educational success. Hitlin and Johnson (2015) empirically tested the utility of this future-oriented aspect of agency and found optimistic life expectations of adolescents exhibit a strong predictive power of later-life outcomes even beyond the effect of traditional subjective aspect of agency. The future expectations and projections are, indeed, "real in their consequence" (Mische 2009, p. 699) above and beyond objective and subjective agency.

6.2.3 *Introducing a Behavioural Facet of Agency*

Despite scholars' efforts to identify multiple facets of agency, the discussion about how this agency is actually translated into action is still incomplete. It is ironic because, by definition, agency is more about "the capacity, condition, or state of acting or of exerting power" (Merriam-Webster 2016) and less about subjective belief. Parsons' ([1951] 2013) teleological argument in his earlier work also implicitly notices the importance of the behavioural dimension of agency because for Parsons, "agency [...] was captured in the notion of effort" (Emirbayer and Mische 1998, p. 965). Given what really makes the movement "from cognition to action" (Mische 2009, p. 702) is this behavioural dimension of "exerting" power, the behavioural component of agency certainly deserves theoretical scrutiny. We know having more of a sense of agency coupled with beliefs about the future motivates higher occupational achievement, but we know less about how those beliefs shape concrete behaviour.

In this chapter, a "behavioural" facet of agency indicates the psychological component of agency that captures one's behavioural *inclination* for exerting volitional action. While the subjective sense of agency relies on one's understanding about the relationship between the self and the world in general, this behavioural inclination of agency is more closely related to one's integrated understanding about her actual habits or behavioural tendencies that are potentially linked to actual agentic behaviours. One may believe that they have a lot of control over their lives, but if that subjective belief is not implemented, then it has little or no effect on their occupational success.

There are a few psychological constructs that elaborate this behavioural facet of agency: *grit*—which refers to the disposition of pursuing effort and interest over the course of years—is a recently developed concept predicting outstanding achievement. Grit, as a noncognitive skill, refers to "passion and perseverance for a long term goal" (Duckworth et al. 2007, p. 1087), consisting of two components: consistency of interest and perseverance of effort. Grit encourages individuals to (a) keep focusing on something (i.e. consistency of interest) and (b) work with great effort to complete whatever he or she decides to do (i.e. perseverance of effort). While people who lack grit tend to more easily give up on their goals and hardly maintain perseverance, people high in grit work strenuously and diligently toward long-term goals despite obstacles (Robertson-Kraft and Duckworth 2013). They sustain their determination, interest and effort in the face of failures or adversities (Duckworth and Quinn 2009). Thus, gritty people can be seen as the ones who have their long-term, future planning in their minds and try their best to achieve their goals with a strong belief in their agency.¹

¹Even though the concept of grit theoretically presumes the existence of long-term goals that an individual wants to pursue, grit researchers have not yet empirically examined whether the person should explicitly articulate those long-term goals to develop gritty inclinations. One may have relatively abstract notions of the future (and not be capable of articulating explicit long-term goals) but still construct lines of action in a way to exert agency. For example, Hill et al. (2016) demonstrated

In this sense, grit perhaps plays a driving force converting the subjective beliefs and expectations into actual agentic behaviours that, in turn, lead to better life outcomes. Indeed, grit researchers have found that a person's grit score is highly predictive of achievement in many challenging fields, ranging from performance among novice teachers to retention at the US Military Academy at West Point (Duckworth et al. 2007, 2011; Duckworth and Quinn 2009; Eskreis-Winkler et al. 2014; Hochanadel and Finamore 2015). Robertson-Kraft and Duckworth (2013) found that among novice teachers in low-income district schools, teachers high in grit outperformed those low in grit and had a higher retention rate than their less gritty colleagues. Grit has been linked to particularly challenging educational contexts: grittier individuals have a higher retention rate at West Point (Duckworth et al. 2007, 2011; Duckworth and Quinn 2009). Eskreis-Winkler et al. (2014) found that grit partially mediates the positive impact of a professional's firsthand experience of violent victimisation on his/her work engagement: in other words, police detectives with a history of violent victimisation tend to have a higher level of grit than those without such hardship, and in turn, those with a higher level of grit tend to be more engaged at work.

A few psychological relatives share similar components of this notion of behavioural agency. *Conscientiousness*, one of the Big Five personality dimensions (Costa and McCrae 1992), is a trait-like construct that can predict a person's psychological orientation to engage in the activation of agentic behaviours. Conscientiousness has multiple facets including competence, achievement striving, self-discipline, deliberation, dutifulness and order (John and Srivastava 1999) and has been suggested as a powerful predictor of life outcomes such as academic success (Nofhle and Robins 2007; Poropat 2009) and job performance (Barrick and Mount 1991). Barrick and Mount's (1991) meta-analysis concluded that conscientiousness is a strong predictor of job performance: conscientiousness shows a consistent, significant association with various job performance-related criteria including job proficiency, training performance and other job performances such as salary, turnover, status change and tenure in diverse occupational fields, from the skilled/semiskilled to professionals. The authors, in particular, found the source of this consistent relationship between conscientiousness and work performance to be "a strong sense of purpose [...] and persistence" (Barrick and Mount 1991, p. 18), both components of conscientiousness, because these elements are essential for accomplishing work-related tasks in most jobs. These findings suggest that a tendency of pursuing a life goal strenuously with perseverance, reflecting the essence of the grit concept, may play a role as a

that having a clear sense of purpose in life and showing commitment to it are important for the development of grit, which in turn leads to attaining the desired goals. While setting explicit long-term goals (e.g. I want to get a supervisor position in my field within 10 years) would be more helpful to exercise agentic actions, setting the direction of her career path or having the future in mind in a broader sense would be still helpful for the person to be agentic, coming up with specific, short-term plans (e.g. attending job-training courses to keep learning new skills/knowledge, studying at least two hours every day for certificates required to get a supervisor position, etc.) to keep moving forward to accomplish their desires and hopes, even without an explicit long-term goal.

behavioural engine that transforms agentic beliefs and expectations into agentic actions, potentially leading to advantaged occupational outcomes.

Little work has explored to what extent this behavioural facet of agency is related to but distinct from the conception of agency as a subjective belief, the core of empirical work on agency. Duckworth et al. (2007) introduced the sense of personal control as a possible determinant of grit, suggesting that grit “may be determined in part by beliefs about one’s capabilities, attributions of positive and negative events, and beliefs about the relative influence of external causes” (Duckworth et al. 2007, p. 1100). The establishment of strong beliefs that people can achieve better outcomes with their capacities and sustained effort (i.e. subjective agency and future expectations) likely affects developing skills to pursue long-term goals (i.e. grit). Indeed, people who perceive themselves as having more agency tend to persevere and endure setbacks (Hitlin and Elder 2007). As Duckworth and her colleagues (Duckworth et al. 2007) suggest, it is easy to picture a person who believes that she writes her own life path exhibits persistent interest and perseverance in pursuit of her long-term life goals. If she wants to obtain better achievement and believes she is responsible for her outcomes, she will be more likely to put enormous effort forth to achieve a goal she desires. In contrast, people who attribute their successes or failures to factors external to themselves may only partially hold tendencies of working diligently toward the long-term goals under challenging circumstances. The link between the sense of control and grit, proposed by Duckworth and implicitly by Hitlin and Elder (2007), thus, implies that the subjective beliefs about one’s agency may motivate individuals to develop gritty behavioural orientations toward their long-term goals, which then leads to better life outcomes.

Beliefs about personal control and future-oriented perspectives are not necessarily congruous with gritty inclination. We can imagine a person who basically believes that her life path is written by her own hand, having the future in mind, but changes her career annually, not having such interest in sticking to a certain long-term goal. Some people who had only average levels of personal control nonetheless had high career achievement (e.g. Hitlin and Johnson 2015), suggesting something else contributes to the gritty disposition that seems linked to successful work outcomes. While grit may be positively associated with the sense of personal control as grit researchers have suspected, grit may not be a mere sub-construct that is fully determined by the sense of agency. Despite this suspicion, no work has yet examined the potential connection between subjective senses of efficacy and grit.²

²Using data from a new cross-cultural survey (collected in the United States, France, Turkey and South Korea), the author (unpublished draft) found bivariate correlation between the sense of control and grit shows only small-to-moderate correlation (ranged from 0.2 to 0.4), indicating personal beliefs about control and grit are related but distinct constructs.

6.3 Conclusion: Discussion and Suggestions for Future Research

The utility of agency becomes meaningful when it is actually “exercised”. Beliefs about capacity for success in one’s occupational life are only part of the story. Hitlin and Elder (2007) make a distinction between the actual capacity to exert control over one’s life and the self-perception of the capacity. Existing studies on subjective beliefs about agency have informed us about its significance in shaping human life: subjective beliefs about agency and future play a crucial role in one’s life course, for example, sometimes in the form of a self-fulfilling prophecy (Hitlin and Elder 2007). However, unlike this subjective agency that provides “measurable sociological constructs” (Hitlin and Elder 2007, p. 186), the actual agentic capacity remains a challenge to agency researchers. A behavioural component of agency, suggested in this chapter as behavioural tendencies of working hard and persistently with a future orientation, will contribute to implementing their influence on their own life paths, by providing a theoretical and empirical detour to speak to this actual capacity.

There is still much to learn. One of the unexamined research questions that should be demonstrated in future research is to empirically explore the relationship between multiple dimensions of agency and both their unique and interrelated contributions to life course outcomes. This chapter introduced three major facets of agency that call for further theoretical and empirical exploration. Issues like how these three components are related to each other, whether we need all of these three components to become an agentic actor or if either of them alone could satisfy conditions for exerting agency are still in question, however. Yet we could expect having all dimensions of agency would definitely contribute to constructing lines of volitional actions that potentially lead to better life outcomes, while having neither produces the worst. For example, Hitlin and Johnson (2015) demonstrated that having both the subjective beliefs of personal control and future expectations produces the most advantageous outcomes while having neither of them produces the worst outcomes. They also found that the two components can substitute for one another, representing different paths toward occupational success and suggesting having either of them produces better life outcomes than having no agency-related components at all. Other combinations such as subjective agency and behavioural agency, future-oriented expectation and behavioural agency and all three agency components in tandem still require further theoretical scrutiny coupled with empirical examination.

Future research should develop better measures of the behavioural dimension of agency. Current measures, including the grit scale (Duckworth et al. 2007; Duckworth and Quinn 2009), are subjective, self-report measures. Thus, they are technically measuring the self-perception of one’s behavioural tendency/orientation, not the actual agency exertion.³ As of now, however, the grit scale is one of the

³Grit scale (Duckworth et al. 2007) includes statements like “I often set a goal but later choose to pursue a different one (reverse coded)”, “I have been obsessed with a certain idea or project for a

best ways to move past pure self-perceptions toward an indicator of behavioural tendencies that offers a more accurate picture about how agency as an actual exertion of power over one's life actually "operates" in human life. We know less about where this aspect comes from; some of it may be inborn and some of it comes from early life but more work needs to operationalise the construct, so we can also explore its social origins. Additionally, this behavioural dimension may operate like self-efficacy, with particular domains being important (grit skills for work might be unrelated to the grit required to master a video game), or there may be global senses of grit. Future measurement techniques should build upon the subjective grit scales that have proven successful for capturing some aspect of this theoretical construct.

Based on previous attempts made by social psychologists who endeavoured to develop a better measure for psychological components, we can briefly discuss several alternative behavioural measurements. Performance tasks in a research laboratory have been widely used to measure noncognitive psychological resources such as self-control and delayed gratification (e.g. the well-known marshmallow test; see Mischel 2014). Performance tasks can avoid some of the limitations inherent in self-report questionnaires, such as social desirability bias, acquiescence bias, or reference bias (Smith 2004). However, this type of one-time performance task may not be the best way to capture grit, which focuses more on how an individual usually behaves everyday (Duckworth and Yeager 2015).

Another possible way to measure grit would be the use of vignettes. Vignette questions describe hypothetical persons, behaviours, or situations to elicit respondents' judgement, attitudes, or reaction with regard to those scenarios (Atzmüller and Steiner 2010; Finch 1987). For example, in a vignette question on grit, we may (a) present a hypothetical person's situation where the person experiences adversities and setbacks while she or he has been working to pursue her or his long-term life goal and (b) ask how the respondent would behave in the hypothetical situation: whether she or he would keep working on the project or simply quit.

Recently, researchers interested in cross-cultural exploration have proposed another use of vignette methods. Individuals often rely on different rating scales or different reference groups when answering survey questions, resulting in the reference bias (King et al. 2004; Möttus et al. 2012). As a remedy for this, anchoring vignettes are suggested for supplementing self-report questionnaires to reduce this interpersonal incomparability and increase the reliability of the scales measuring socioemotional skills (Duckworth and Yeager 2015; King et al. 2004; Primi et al. 2016). In this design, respondents are first asked to rate themselves on the grit scale,

short time but later lost interest (reverse coded)", "I finish whatever I begin" and "Setbacks don't discourage me", asking respondents to what extent they are similar to the person described in the statements. In the Big Five Inventory (BFI) that is widely used as a traditional personality questionnaire (John and Srivastava 1999), respondents are instructed to indicate the extent to which they agree or disagree with statements like "Does a thorough job", "Can be somewhat careless (reverse coded)", "Is a reliable worker", "Tends to be disorganised (reverse coded)", "Tends to be lazy (reverse coded)", "Perseveres until the task is finished", "Makes plans and follows through with them" and "Is easily distracted (reverse coded)". Thus, strictly speaking, these scales measure respondent's self-perception of their inclinations, rather than their actual behaviours.

using 5-point Likert scale. Then, using the same scale, respondents rate hypothetical individuals' behaviours (described in short vignettes) in which each vignette represents different rankings of the scale, from most to least grit. Using vignette ratings, researchers could correct self-reported scores of the scales (e.g. King et al. (2004) used this method to study political freedom and efficacy, Mõttus et al. (2012) and Primi et al. (2016) tested Big Five personality scales including conscientiousness). We need more research on methodological alternatives given the rising importance of grit on educational policies and enhanced attention from the general public across countries.

Another research direction that calls for future investigation involves cross-cultural examination of these many facets of agency. The majority of social psychological studies have been conducted in the United States (Heine and Norenzayan 2006) or at least the WEIRD—Western, educated, industrialised, rich and democratic populations (Henrich et al. 2010). Thus, the measure and utility of the concept of grit and other agency-related constructs that are primarily developed and largely examined in the United States should not be simply generalised to other populations in different countries. For example, Sastry and Ross (1998) argue that individualistic societies encourage individuals to develop agency and give priority to individual goals over in-group goals while collectivistic societies discourage individuals from developing agency. This further implies that having autonomy and control over one's life is more valued in individualistic societies compared to collectivistic societies.

The social evaluation of grit likely varies by society and may be a significant factor that could produce cultural and social structural variance in its development at the individual level. Lamont (1992) describes how the upper-middle class in the United States tend to condemn people they consider phony, social climbers and having low morals, and in doing so they enjoy the feeling of moral superiority. Indeed, hard work and having a sense of control become important in the societies where that meritocratic value is predominant because the belief "I get what I earn" may encourage individuals to put enormous effort on their own work for achievement. People feel moral credit for developing certain orientations and skills, classically described by Weber ([1904–5] 2002), and this is advantageous within a system that rewards long-term planning and individual effort like the United States. Other countries may describe their people in general as gritty. For example, in Finland the word *sisu*, often described as the Finnish spirit, refers to the inner determination and perseverance (Brueggeman 2008; Stoller 1996). Even though the concept grit captures individual features and is studied at the individual level, this kind of value system in these societies certainly contributes to encouraging development of the gritty disposition of individuals who reside in such cultures, potentially leading to a greater level of gritty disposition of the Finnish population on average, for example, compared to the counterparts who reside in other societies which lack the culture of valuing grit and grittiness.

As mentioned previously, research on agency leaves many questions about the relationship between status, subjective agentic beliefs, future-oriented expectations and gritty disposition in general. This is additionally complicated and a fertile area

for research, in looking at whether behavioural facets of agency operate similarly or differently in different types of societies. Also, how these facets of agency are linked to educational and occupational achievement in different countries is still in need of further investigation. Future research should expand their focus to other countries in different cultural contexts, beyond the United States or western countries.

Grit, as a measurable skill, has a great deal to add to sociological discussions of status attainment, a potential link between internalised structural advantage (e.g. Featherman and Hauser 1978; Sewell et al. 1980) and expectations and aspirations predicting later life outcomes (Morgan 2005; Reynolds and Johnson 2011; Vaisey 2010). Grit, potentially, is a mechanism explaining why some people with various levels of intelligence, aspiration or structural advantage persevere, while others are less able to stick with advantageous life course pathways. While structural position at birth is a large factor in predicting later work outcomes, there are those from disadvantaged positions that achieve more than would be predicted; grit is one important potential factor in understanding why these cases are successful. One obstacle to grit's adoption within sociology, however, is the tendency for it to be treated as a locally learned skill, either present or not, rather than as linked to structural and cultural positions. Despite their clear stance of viewing grit as being essential to achievement, grit researchers have not provided a clear explanation about where grit comes from. The implicit worry might be that if it is just "inborn", it does not help explain the reproduction of the stratification system over time. However, the fact that there is variance in grit among individuals implies that grit is not equally distributed within a population. Hence, future research should try to figure out where grit comes from, whether part of structural advantages include early life development of gritty dispositions and beliefs, and try to suggest useful interventions to develop grit that help produce better achievement in educational and professional fields.

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Chapter 7

Agency, Learning and Knowledge Work: Epistemic Dilemmas in Professional Practices

Nick Hopwood

7.1 Introduction

This chapter works from the assumption that demands for professionals to exercise agency may arise regularly in the course of work. This follows Billett and Noble's (2017, this volume) broader argument that everyday activities and interactions in work are crucial sites of learning and development – a widely recognised notion yet one that requires further scrutiny and theorisation. Agency is not reserved for particular moments of change, but rather can be seen as something that is required of professionals as they engage in relationally complex practices. This refers to changing relationships between professionals and clients, in which professionals no longer provide a standard product or service for clients, but rather engage in fluid collaborative work, ensuring adaptive and agile approaches and outcomes. Specifically, this chapter focuses on practices unfolding under a rubric of partnership between professionals and parents with young children at risk due to one or more vulnerabilities.

Taking up Edwards' (2016a) ideas, agency renders practices responsive and emergent, as implied in the idea of partnership. Agency is conceived here as connected with the way professionals recognise what is demanded of them in work, particularly when such demands are nonroutine. The analysis points to the knowledge work that is done in recognising and responding to these demands. Agency is not seen as a personal property or quality, but rather arising through the dialectic between person and practice and being concerned with the capacity to influence the conditions that affect development. The demands that provoke agentic responses in

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the setting examined here are understood as epistemic dilemmas, meaning they relate to challenges professionals face in proceeding amid knowledge conditions characterised by uncertainty, partiality, and fragility.

Rather than viewing the professional as engaging with clients purely on the basis of a stable body of core expertise, this account shows how prior knowledge is not sufficient to close down on questions of what to do. Thus, the professional has responsibilities beyond acting in accordance with professionally or publicly validated forms of knowledge. Instead, professional responsibility extends to recognising epistemic dilemmas and the demands they present and responding agentially to them in order to bring fresh knowledge to bear and produce new knowledge that can enrich the epistemic basis for action.

The analysis focuses on professional agency arising in everyday work activities in a parent education service. Services for children and families play a vital role in supporting society's vulnerable young citizens and those caring for them. The term "parent education services" is used here to refer to a range of approaches that help parents cope with challenging circumstances that are often not of their own making. Note that this does not imply a deficit model of parents nor a fixed curriculum of "good parenting" knowledge that is imposed on families. Rather, it recognises that parents have a strong influence over child wellbeing and development outcomes and that stepping in to help parents in need of assistance often requires forms of pedagogic work that shift the ways parents interpret and act in their world (see Hopwood and Clerke 2016). Such services include specialist speech and language support, parent-child interaction therapy clinics for parents of toddlers, day-stay and home visiting services, group courses for parents, breastfeeding clinics, and services focusing on support for families coping with adolescent mental health or perinatal mood disorders.

Engeström (2005) argues that theorisations of agency have not been sufficiently grounded in empirical observations of people's daily practices at work. In response, this chapter draws on ethnographic study of a residential service where up to ten families attend a specialist centre for 5 days, supported by a team of nurses (who cover each 24-h period over three shifts) and range of allied health, medical, and child care professionals. Parents are referred to such services when one or more factors that render the family vulnerable to risks have been identified. Such risks can include chronic fatigue associated with disrupted sleep, nutrition concerns, challenging behaviour, and a range of contextual factors such as domestic violence, social isolation, drug, and alcohol abuse. Hopwood (2016b) provides a detailed description of the unit's staff, clients, layout, and the weekly cycle of work.

The empirical data were collected through sustained ethnographic observation by two researchers (see Clerke and Hopwood 2014; Hopwood 2013, 2014b, 2015). In total 60 visits were made over a 9-month period. Most of the fieldwork concentrated on shadowing professionals as they interacted with clients and as they discussed clients with colleagues. These discussions took place regularly in handovers at the overlap between the three shifts (early morning, early afternoon, and late evening). They also took the form of weekly case conferences in which complex clients were discussed by a multi-professional team, a weekly staff briefing, and

informal discussions in the staff room or other private spaces on the unit (see Hopwood 2016b). Handovers emerged as a key site of professional learning and locus of the development and exercise of professional agency. Given this, professionals were asked to audio record their handover discussions for two consecutive weeks. This enabled the trajectories of professional work in relation to families over their 5 days to be traced (two such cycles were incorporated in the audio data).

Several times a day, handover is given between nurses as one shift ends and the next begins. At the surface, these constitute updates about what has happened with each family and include passing on of information that results from interactions between parents and other professionals on the unit (such as the psychiatrist, social worker, paediatrician, etc.). Strictly speaking, handover is mandated as a transfer of responsibility and information (ACI 2013). However, the analysis will show that much more is going on in handovers than this. They are crucible in which epistemic dilemmas are worked through, as professionals work together to recognise demands of practice and respond to them. The argument here is that agency arises through handover activities, and the narrative artefacts, produced through them, aid professionals in working through epistemic dilemmas in practice.

The next section outlines a number of relevant conceptual points of departure, locating the analysis within a broad cultural-historical framing and connecting it with the work of Knorr Cetina (2001). An account is then provided of the epistemic dilemmas that arise regularly in this residential parenting service, before case studies of work with particular families are presented. The discussion then takes these as a basis for exploring questions of agency and knowledge work. Analysis of handovers relating to one family has been presented previously (Hopwood 2016a). What follows builds on that prior analysis, in particular connecting the idea of handover with questions of professional agency, in keeping with the broader focus on this volume. This connects analysis of the ethnographic data with the conceptual threads being explored in a follow-up, multiphased study of other (non-residential) services for families with young children (see Hopwood and Clerke 2016; Hopwood and Gottschalk *in press*; Clerke et al. 2017).

7.2 Conceptual Points of Departure

Following Edwards (2016a), the term cultural-historical is used in locating the approach to analysis, reflecting Vygotskian roots and extensions of Leont'ev's work on motives, but without the systemic mapping associated with cultural-historical activity theory (CHAT), of which Engeström's (2001, 2004, 2007a, b) work are well-known examples (see also Roth and Lee 2007). The particular view of professional agency presented here is resourced by concepts of the object and object-motive, knowledge work, and epistemic objects and agency. Each will now be briefly outlined, rehearsing the ideas that are taken forward in the subsequent discussion. Developed, and in places extensive, literatures are available concerning these ideas, and the purpose here is not to reproduce or compress this wider work,

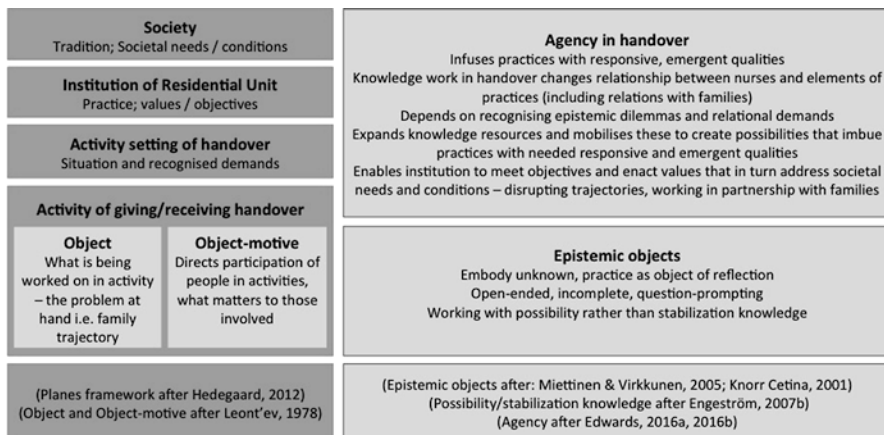


Fig. 7.1 Outline of conceptual points of departure

but to focus on what is most pertinent to the present analysis. Figure 7.1 presents a summary of the key points discussed further below.

7.2.1 *Object of Activity and Object-Motive*

The object of activity is what is being worked on. In the residential unit, this is usually the trajectory of a family facing significant challenges. Leont'ev's (1978) work highlighted the intimate association between objects and motives. The object-motive directs the participation of people performing activities. This concept is central to a cultural-historical perspective (see Kerosuo 2017, this volume, in which the object is defined as a purposeful, shared target of actions and interactions in activity). A common problem shared by more than one person may give rise to different motivations and approaches to it. The concept of object-motive highlights how people bring a sense of what matters to them when they interpret and work on a problem. Therefore, when tracing how nurses work together on different family trajectories (objects), it is important to attend analytically to what matters to those professionals. As the discussion below shows, this may have relatively stable features relating to broader professional values and intentions, but may also have aspects that emerge and develop as the collective understanding of the object expands. Figure 7.1 locates the object and object-motive within the activity of giving and receiving handover.

Edwards' (2016a) and Hedegaard's (2012) work show how such motives are not independent of the practices, institutions, and societies in which activities are embedded. Hedegaard (2012) identifies planes of analysis (referring in her original instance to children's development, but the ideas are useful more broadly) that clarify this point. She connects the person with the process of activity and motives or

intentions, while the activity setting involves a situation where demands form a crucial dynamic (demands are significant in the notion of agency taken up presently; see below). Practice is performed within an institution, which is in turn embedded in society where conditions and broader social needs are in play (see also Edwards et al. 2017, this volume, who discusses Leont'ev in connection with society producing the individuals performing it). These are illustrated on the left of Fig. 7.1. One can understand a nurse giving handover as acting on the basis of particular intentions that might arise from immediate and personal experience of working with a family. The object-motive of handover directs how the practitioners participate together in the activity. The analysis will show how this motive is more than transferring information and responsibility, but can be understood as a collective attempt to respond to situational demands associated with epistemic dilemmas and uncertainty how to proceed.

Handovers are embedded in practices of the residential unit (as an institution). These practices include ongoing work with families (discussing goals, settling, and feeding children), leading group activities (e.g. around toddler management, an outdoor pram walk, and messy play), making referrals to other health professionals, case conferences, and so on. From a cultural-historical perspective, handover activities and these wider practices are understood to be in dialectic relationship – shaping and shaped by one another. These practices are associated with professional values and institutional objectives to satisfy parents' goals, demonstrate positive outcomes, and disrupt trajectories that threaten child and family wellbeing. In turn these reflect societal needs and conditions, here including social and economic inequalities that impinge of parents' capacities to cope with challenges, publicly validated notions of “good parenting”, and legal frameworks regarding child protection. The analysis that follows attends to the activity (personal performances) and activity setting (situation of handover), although it is important to recognise the embeddedness of this and connections with other planes.

Thinking about the object and object-motive in handover as an activity opens up useful pathways to insights on professional agency. Objects are not just given, but are constructed as people make sense, label, and enact aspects of their work (Engeström and Blackler 2005). Thus, the object in handover – a family's trajectory – can be understood as subject to horizontal or expansive addition of meanings or potential replacement of old meanings with new ones (this connects with the epistemic dilemmas, discussed below). Location work, asking “In which location?”, is on way through which shared meanings attached to objects can develop (Engeström 2007a). This proves important in understanding handover practices.

The constructed nature of objects does not mean they are arbitrary or constructed in an epistemic or practice vacuum. Indeed, tracing connections across the planes described by Hedegaard (2012), as was done above, shows how institutional practices, social norms, professional knowledges, and individual experience can shape objects. The object of handover does not come from nowhere, but arises in part through historically accumulated ways of working, understanding families and risks to them, and so on. This is only “in part” because, as the analysis will show below, the object also emerges through novel conditions that reflect the particular moment.

Hedegaard's (2012) framework guides the analyst to how practitioners recognise and respond to demands in particular activity settings. This has been fruitfully taken forward in Edwards' (2016a) work on the agency of beginning teachers. Edwards' adoption of a Taylorist notion of agency cues the researcher to nonroutine actions where attention is given to what a problem demands and the effort expended in developing a response. Applying this to handovers reveals much of importance in terms of the agency involved in partnership work with clients.

7.2.2 *Knowledge Work and Epistemic Objects*

Problematising the relationship between practice and knowledge makes possible an important set of questions that inform our understanding of professional agency. Hager (2011) describes a range of theoretical approaches that do not assume the learning needed for successful performance in an occupation can be fully specified in advance. Contemporary cultural-historical accounts share this position, pointing in various ways to the regular demands for knowledge work that arise in practice. Metaphors of emergence and expansion dislodge notions of acquisition, transfer, or participation and have implications for how we conceive professional agency. Practice is not a question of enacting prior knowledge, but rather involves, at least in part, doing knowledge work. In this chapter, Hermansen's cultural-historical definition of knowledge work (developed in studying Norwegian school teachers' work) is appropriate: "the actions that professionals carry out as they work with and upon the knowledge that informs their professional practice" (2014, p. 470).

This brings us to epistemic objects (see lower right of Fig. 7.1). "Technical objects" are relatively stable, unlike "epistemic objects" which embody what remains unknown (Rheinberger 1997, in Engeström and Blackler 2005). The notion of epistemic objects points to how ways of working can become the object of reflection and development (see Miettinen and Virkkunen 2005). In other words, practice can become an object to be worked on, and idea that proved crucial in work on how contributions of clients can be valued and strengthened (see Edwards 2016b).

Knorr Cetina's (2001) distinctive, but related, notion of epistemic objects is relevant here, too. She emphasises dissociations between self and work, moments of interruption, and reflection. Epistemic objects are open ended, incomplete, and unfinished, prompting particular kinds of questions. Practitioners approach them from both a position of intimacy (involvement in practice) and separation (working on that practice). In what follows, handover is revealed as a way of working on what is known, reflecting on ways of working, and constituting understandings of each family as incomplete and unfinished. This points to important epistemic dimensions in the exercise of professional agency in response to the demands of practice. Links can also be made to Engeström's (2007b) distinction between stabilisation and possibility knowledge. The former simplifies and freezes shifting objects, as would be the case when professionals regard a family as "not ready for change" (Hopwood et al. 2016). However, the handovers under examination here

work much more with possibility knowledge, oriented towards transformation, movement, and opening up.

7.2.3 Agency

It is important to note the multiplicity of conceptions of agency that have arisen within the Vygotskian tradition. Sawchuk (2015) has raised questions of agency by highlighting administrative, craft, and floundering trajectories among Canadian welfare workers. Lemos' (2015) account of diverse stakeholders' responses to flooding events in Brazil draws on concepts of transformative agency (Virkkunen 2006; Sannino 2015a, b), focusing on envisioning future possibilities, being able to change the course of activities, and adopting different positions. Lemos also refers to Miettinen's (2013) idea of collaborative agency, referring to creative encounters in which multiple participants engage in work oriented around joint objects. Engeström's (2005) work on collective intentionality capital has some resonance with the present analysis; however, its association with multiple, often divided, activity systems renders it less appropriate in this instance. The analysis of handovers here draws on different concepts, continuing the line of analysis that has been applied previously in the analysis of data from the residential unit. In Hopwood (2016b) foundational Vygotskian concepts such as the zone of proximal development were connected with practice theoretical interpretations of temporality, spatiality, embodiment, and materiality. Subsequently, Hopwood (2016a) and Hopwood et al. (2016) took up cultural-historical ideas more centrally in the analysis, drawing on Edwards' (2016a, b) concepts of relational agency, relational expertise, and common knowledge. The present chapter develops this work further, and the key points are presented at the top right of Fig. 7.1. The positioning in horizontal relationship to the elements on the left does not depict a strict theoretical relationship, but nonetheless indicates the attempt to elucidate professional agency in a way that connects the intricate work of handover with broader institutions, practices, and traditions in which this is embedded.

The idea that agency infuses practices with responsive and emergent, rather than static, qualities (Edwards 2016a) links with the contrasts drawn in discussion of epistemic objects above. In Edwards' view of agency, question of knowledge and transformation (of the object) are held close at hand. Edwards' (2016b) quotation of Nowotny clearly evokes connections between knowledge, epistemic work, and professional agency:

Experts must now extend their knowledge, not simply to be an extension of what they know in their specialist field, but to consist of building links and trying to integrate what they know with what others want to, or should know and do. (Nowotny 2003, p. 155, cited in Edwards 2016b)

Here there is a sense that agency involves recognising and responding to the epistemic demands of a situation in order to move forward, expand the knowledge

resources at hand, and create possibilities. The demands in handover practices are discussed below with reference to epistemic dilemmas – features of the situation where the nature, status, and adequacy of knowledge in determining what to do next are called into question.

The idea of agency concerning the ability to influence conditions that affect development was mentioned in the introduction to this chapter. Key here is the idea of changing the relationship between people and elements of practices (Dreier 2006). This could involve changing relationships between nurses (individually and collectively) and the unknown aspects of practices or the realm of what particular knowledge of and relationships with families make possible in terms of kinds of support and challenge that might be presented to them.

It is worth noting that professional agency in this view is not predicated upon reifying clients, but rather the objects incorporate the client and professional through a set of meanings that arise from and refer to *relational* practices. While there is a sense of the family as “something to be known”, professional agency arises not from the demand to fix this or hold it still, but rather from recognising what the relationship with the family demands and what it offers as a social and epistemic resource for responding to those demands.

The view of agency presented here takes up the cultural-historical emphasis on the dialectic relationship between person and practice and the assumed importance of agency in this dialectic (see Edwards et al. 2017, this volume). It further builds on some of the foundations underpinning Edwards’ (2016a, b) work on relational agency, which have at their heart questions of how practitioners (can) engage with a problem, attending to how they respond to the demands a problem presents (see also Edwards et al. 2017, this volume). The relational concept focuses on the capacity to align thoughts and actions with those of others to interpret and respond to problems of practice (Edwards 2005b). The object of activity is transformed by recognising and drawing on resources that others bring to bear. However, this analysis and the framework outlined in Fig. 7.1 foreground more centrally the epistemic dimension of problems of practice and the knowledge work that responds to these. I therefore build on Edwards’ notion of agency as a *capacity* and maintain a focus on how the object is expanded – imbued with more complex understandings that are often shifting and unstable.

Kerosuo (2017, this volume) works with a concept of transformative agency, defining it as “the ability of individuals and groups to transform the organisation of their work and practices in changing circumstances” (p. 331, after Virkkunen 2006). The concept I work with in this chapter does not share Kerosuo’s focus on transformations in contradictory situations or changing circumstances, but it does share an assumption that agency emerges through an “interplay of subjective and collective actions” (Kerosuo 2017, this volume). Professional agency is thus not a property of an individual nor of a group, but is a capacity that arises as people work, and work together. It cannot be carried by a person, but is rather embedded in dynamic ways of working – activities that respond to the demands of situations arising in practices (see also Edwards et al. 2017, this volume). The analysis that follows traces this

emergence with a close focus on how professionals recognise and respond to epistemic dilemmas in their work.

Insofar as these agentic responses expand the object, producing new knowledge and working with existing knowledge in new ways, they are understood to depend on professional learning, conceived in terms of changing interpretations of and actions in the world (see Edwards 2005a). As Edwards et al. (2017, this volume) discuss, agency in such cultural-historical terms has a moral dimension, connected both with the (object-)motives in particular activities and also broader social values (hence the value of Hedegaard's (2012) framework that reminds us of the embeddedness of activities in institutions and society – see Fig. 7.1).

7.3 Epistemic Dilemmas

If agency in professional work is to be conceived in terms of recognising and responding to the demands of practice, then we must be clear about what these demands are and how they arise. The adoption of partnership-based approaches in services for parents with young children at risk has changed and intensified the demands on professionals. Specifically, this chapter is concerned with partnership as an example of historically new forms of relationally complex work, part of a broader phenomenon often referred to as coproduction (Voorberg et al. 2014). In Australia, the Family Partnership Model (FPM) has been adopted and associated training provided to help professionals recognise and respond to some of the demands associated with the forms of relational work that are expected (see Day et al. 2015). The FPM and similar models reject expert-led approaches in which professionals are the (only) knowers, who fix problems for clients, or simply tell parents what to do. Instead, the idea is that professionals and parents work together to define goals, construct helpful understandings of problems, explore possible solutions, and reflect on progress. Relational work is heralded in terms of building trust, active listening, demonstrating empathy and unconditional positive regard for clients, and respecting professional and client expertise. FPM training helps professionals attend to relationship-building demands and to develop communication skills that support appropriate relational work (Day and Harris 2013).

However, previous analyses have shown that partnership work generates other demands on professionals (Hopwood 2014a, 2016a, b). These arise through complex relational work, but are best characterised as epistemic in nature. In other words, they concern the nature and status of knowledge and require knowledge work, not just relational work, in order to address them. Three interconnected epistemic dilemmas became evident through the analysis of the handover data, as well as the wider ethnographic data from shadowing professionals on the residential unit.

The first epistemic dilemma relates to partial or incomplete knowledge. Professionals never *fully* know the families they are supporting. Intake and admission procedures generate rich knowledge about the family background, current challenges, strengths, and vulnerabilities. However, gaps always remain that have a

bearing on what professionals do. This is not a question of deficiencies in professional education or training, of poorly designing admission processes, or of leaks in information exchange. Families are themselves complex institutions, and complete (relevant) knowledge of them – in the sense of knowledge that sews up questions of how to act – is always beyond the professional grasp.

The second epistemic dilemma relates to the fragility of what is known. What appears as robust is often shown to be otherwise. Even “facts” like how many children a mother has could change, for example, as practitioners learned that a mother’s answer shifted depending on whether or not she included a child who had died. As relationships between professionals and parents develop, answers to questions about strains, conflict, or violence within the family may change, as may understandings of a parent’s ability to cope with challenges or participate in particular practices while on the unit or when back at home.

The final epistemic dilemma arises because even less fragile knowledge may be unstable. This instability arises because the families are themselves changing over the course of their time on the unit. What matters to parents may change; parents may become optimistic as they see glimmers of change, or overwhelmed as they recognise what is demanded of them and the timescales of change, when they were perhaps hoping for a quick fix. Knowledge informing professional actions on Monday may well be redundant by Wednesday.

Therefore, this analysis explores professional agency in terms of the capacity to recognise and respond to such dilemmas. As they are epistemic in nature, they require knowledge work. Just as a particular dilemma cannot be associated with deficient knowledge in any one practitioner, so is the associated agency not understood as an individual property. Rather, it is understood in terms of how these professionals navigate a constantly changing field of possibilities and how this field comes into view through work that opens up rather than closes down, work that embraces epistemic dilemmas head-on.

7.4 Case Studies

In this section, the history of work with two families will be presented. This draws on data from handovers between professionals. Each example shows how one or more of the epistemic dilemmas discussed above become manifest and provides a concrete reference point for the conceptual discussion of agency in professional work that follows.

7.4.1 *Sally and Her Three Boys*

Sally had recently separated from her partner, who was described as unsupportive and unreliable. She had also stopped medications for depression and was largely alone in caring for Charlie (2 ½ years old), Brocky (20 months), and Nathan (10 months). She sought help with reducing Charlie's frequent night waking and Brocky's vomiting when being settled for sleep and tendency to jump into his younger brother's cot. All three were fussy eaters and Sally was concerned about their nutrition. Errors in the referral information relating to the children's ages were corrected on admission.

On Monday, handover included discussion of the success one nurse had had with getting Brocky to eat using a fork. The boy had fed himself, and Sally was every encouraged, so the plan becomes to try this again and see if Charlie responds positively, too. Of more concern were suggestions that Brocky may have a speech delay, which the nurses think might explain his observed biting, pinching, and pushing (reflecting his frustration in communication). They also wondered whether his hearing might be limited, and a plan is made to discuss arranging tests with Sally. Having found out why Sally is so alone (her own family have serious mental illness that make them unable to help regularly), the nurses planned to explore whether she might be receptive to volunteer-based assistance, given that she declined home care support.

By Tuesday, new issues entered the handover discussion, including Sally's practice of putting the boys to bed around 9 pm and her struggles with bathing them separately. The plan became to suggest an earlier bedtime and offer to help with bathing the boys together. Having observed Charlie "grazing" on food throughout the day, they decided the next step should be to talk to Sally about eating around mealtimes. Having found out that Nathan was being given six small bottles a day, they plan a similar approach, focusing on fewer, larger bottles and snacks instead. Tentative indications were that ignoring Brocky's screams appears to work, so continuing with this approach seems appropriate. A nurse was able to find out which bed Sally was putting the boys down in, so they can now monitor each child more effectively. Much of the discussion was devoted to an incident in the playroom and its implications for the next shift. Brocky had become quite distressed during a music and dance activity, and Sally had been visibly anxious too. They had suggested leaving the playroom and explained that Brocky might not understand what is going on, if he has a hearing impediment. The need to check his hearing now became more urgent, and the staff work together on how to arrange for play that would be calm and less confusing for Brocky. The self-feeding approach continued to work well, and the decision was made to persist.

A day later, the assessment that Sally was coping well was reassessed, after she struggled when the older boys exhibited challenging behaviour. As the feeding issues were showing improvement, the professionals decided to offer Sally additional support around behaviour management. The previous night, one of the nurses had actually been in the nursery when Sally was trying to resettle Nathan and had

noticed the cool temperature. The child settled more easily when the room was warmed up, so a note is passed on to ensure the heating is put on around 5 pm.

Further down the track, the handover shifted to a new focus on how to respond to Sally's questions about whether Brocky has autism or ADHD: they need to acknowledge what is clearly a concern for Sally, but equally have to recognise that no clear diagnosis has yet been made. The emerging idea was to help Sally play at his (physical) level and offer eye contact – practices which they expect will be helpful regardless of the diagnosis. One nurse reported Sally's intention to move Charlie into her room at home, as this arrangement has worked well here on the unit. This had implications for what the practitioners do next, prompting consideration of the broader plans for Sally's return home. By the final handover, the issues under most active consideration concerned various follow-up appointments and helping Sally access support that is acceptable to her.

7.4.2 *Carla with Didrika*

Carla came to the unit for help with her 2½-year-old daughter's nutrition. Other health professionals had said the child needed additional iron, but Didrika would spit it out or vomit it back up. Through the admission interview, the professionals learned that Carla's mother had been force-feeding Didrika, and it seems Carla may have been doing this herself, too. This was adopted as a provisional reason why Didrika is refusing food.

By Tuesday morning, the practitioners were working on how to follow through on the paediatrician's request that they challenge Didrika over the coming days, expecting this to be tough because the child was so anaemic and likely to have little appetite. The plan was to work on making mealtimes relaxed and fun for both mother and child. Given the dining room is usually a public space (up to nine other families are in residence at the same time), the handover discussion explores ways to avoid there being an "audience" for this family, including special picnics.

Subsequent handover meetings discussed Carla's negative response to her daughter and the absence of warm interactions between them. Although a picnic had been set up in the playroom, Carla attempted a feed in the dining room instead, which quickly became negative. Now there was iron in Didrika's water, she was only taking small sips, and the staff were concerned that she was losing a source of hydration. The professionals learn that Carla disagreed with the paediatrician's suggestion of two cups of cows' milk per day (because she worried this would reduce her daughter's appetite). An attempt to find out from Carla when these issues started was met with Carla "shutting down", so plans were made to try a different way to get an understanding of this history. They also discussed how Carla seemed not to be following through on suggestions that had been agreed. A way of wording was constructed, along the lines of "It seems you're finding some things quite hard. Is there something you're uncomfortable with? Is this very strange for you?"

Alternatives to the playroom picnic were discussed, leading to the idea of putting a playroom table in the dining room.

The next day, the practice of putting the special table in the dining room was reported as being met with some success. For the first time, Didrika seemed content in the dining room and had sat with her mother at the table. So, the decision was made to try this again. The discussion with Carla about why she wasn't following through on plans had revealed that she sometimes struggled understanding English, although she declined an interpreter. A collective decision is taken to ask Carla to describe back what her plan is, after each discussion with the practitioners. Putting iron in the water had proved problematic, and so the paediatrician was consulted, who suggested chocolate milk instead, something Carla seemed happy with. Further discussion focused on how to make mealtimes more fun, settling on the idea of fairy bread.

The next handover included reports that Didrika was seen leading Carla to the dining room because she knew there would be fairy bread. The child played happily with the food and put some in her mouth. However, the nurse working with her noted that Carla felt there has not been much improvement. The next step became to talk to Carla about her expectations and to try to help her see how she has begun to bring about positive change. A secondary focus for the nurses became talking to Carla about how to make food and mealtimes fun at home, resulting in the father bringing special German sausage roll in, which Didrika did eat. By the end of the week, the decision was taken to offer a second residential stay to this family and to suggest that Carla's younger child comes along too, so that positive food relations might be established early on and the longer-term work with Didrika continue.

7.5 Discussion

This discussion will take each case in turn, connecting back to the concepts discussed previously, building a distinctive account of agency in the conduct of professional work. The next, concluding, section positions this in more general terms in relation to cultural-historical ideas and concepts of epistemic objects and agency. For the moment, the focus lies on tracing the objects and object-motives around which the activity of handover was configured.

The professionals working with Sally and her three boys recognised and responded to several demands that were epistemic in nature. They had to cope with incomplete knowledge relating to Brocky (his hearing, potential autism, etc.), finding ways to continue supporting Sally and meeting her needs, without acting as if certainty existed or could be quickly found in these regards. What appeared on admission as a common problem of fussy eating shared by boys proved a fragile as a singular object. Emerging knowledge expanded the object, as Charlie's graze feeding and Nathans frequent small bottles emerged as having an important bearing on their behaviours, while Brocky's positive response to opportunities to feed himself shifted the meanings attached to making progress. Expanding the object made

it possible to generate new possibility knowledge and draw up new plans of action, for example, seeing the opportunity to address Charlie's feeding issues by establishing a more meal-based rhythm and help with Nathan by using larger bottles.

A number of object-motives can be teased out in this work, as the handover reports reveal the demands recognised by the professionals and what guided their response. The professionals were alert to both Brocky and Sally's distress after the music and dance incident, recognising that what was needed was a play setting that would help Brocky remain calm, and a way of interacting with him that Sally could engage in without the benefit of a firm diagnosis. Revealed here are shared motives to ensure play is experienced as fun by children, to help Sally cope with the uncertainty surrounding her son's condition.

Understanding why Nathan was unsettled on the unit emerged through the nurse's embodied presence in the nursery, through which the temperature issues were detected. This was then taken up in handover in terms of a shared responsibility to ensure the room was warmed up in advance. In some ways, this appears a mundane demand and response, but it is reflective of epistemic motives to understand what is producing particular child behaviours and a realisation that such understanding develops through a range of pathways – verbal report from parents, observation of parents and children, and physical presence. It is through handover activity that what one practitioner recognises and responds to during a shift becomes available as a resource for collective knowledge work to shape what happens next.

Also of note in Sally's case is the work done about what will happen after she leaves the unit. There is an institutional motive for Karitane, seeking outcomes that outlast each family's stay on the unit. Practices embedded in this institution thus are framed around motives to manage transitions back to home life. Accordingly, the activity setting of handover involves professionals recognising and responding to demands relating to what happens beyond the time and space of the unit (see Hopwood 2016b, for a detailed discussion of temporality and spatiality in these practices). In this regard, the object is constructed as spatially and temporally extended, incorporating Sally and her boys' future life at home and in the community. The associated motives are to ensure that positive changes realised here and now are not lost in the move back home at the end of the week. In this specific case, particular demands arose around Sally's refusal of home care support, pursuing further testing for Brocky, and arranging for the children's sleep in a way that is conducive to calm settling and less disturbed nights (bathing together and Charlie being in Sally's room).

What of Carla and her daughter? Here, epistemic dilemmas arose in terms of the gradual unveiling of the history of feeding practices and reasons for Carla's apparent reluctance or inability to put new ideas into practice. Guided by the motive of improving Didrika's nutritional intake, the object that was most consistently worked on was "how to make food and mealtimes fun". This was expanded and shifted in focus as the week went on. "Failures" (such as the playroom picnic) were not epistemically redundant, but rather became resources that provoked discussions bringing about new possibility knowledge.

An intertwined set of objects also emerged around Carla's understanding of what was happening. These included helping her understand how force-feeding might be unhelpful, offering alternative possibilities for positive reframing, helping the mother to see where change was being achieved, and managing expectations about the timeframe for change. Judgements about progress made and this family's capacity to cope led to a second cycle of residential support being offered. At play here again are institutional motives to secure lasting change, a context for practices of repeat visits, which in turn frame the demands that the professionals recognise and respond to in the activity of handover.

7.6 Conclusion

What agency is being exercised in these moments? What does accounting for it in this way reveal about how we can conceptualise agency in professional work? First, it is important to specify what is being accomplished in these handover activities and the practices in which they are embedded. Far from a straightforward transfer of information and responsibility, each handover involved complex, nuanced knowledge work. While the activity of giving handover is itself highly routinised (see Hopwood 2016b, for a discussion of its scripted and choreographed forms), the objects around which this activity is constituted are far from routine. Handover meetings are activities where attention is given to what particular problems demand and where effort is expended in developing a response. As such, building on Edwards' (2016a) notion of agency, handover activities are sites where agency is being exercised and where professionals are subject to demands to cope with what falls outside of routine.

It is worth pausing, briefly, here to consider what it might mean for agency not to be exercised, or for this to be compromised or curtailed in some way. The cases discussed above all point to strongly agentic work that recognises and responds to epistemic dilemmas through an interplay of subjective and collective actions (see Kerosuo 2017, this volume) that arises in the dialectic between person and practice (see Edwards et al. 2017, this volume). What would it look like if this were not the case? Such instances were not apparent in the complete set of handover transcripts, and so here the conceptual "ingredients" of the agency described above are considered in order to specify what the lack or frustration of agency would involve. First, it is hard to imagine how professional agency of the kind being discussed here could arise if professionals do not or cannot recognise the demands of situations they engage in at work. The analysis above has highlighted the importance of epistemic dilemmas – showing how agency relies of questioning the nature, status, and adequacy of knowledge being put to work at work. Once recognised, the response to such demands requires fluidity, dynamism, and constructive or expansive qualities. Therefore, responses that stabilise (Engeström 2007b) knowledge, reify complex relationships with clients as technical rather than epistemic objects, and bracket

practice itself as something outside the scope of reflection (Miettinen and Virkkunen 2005) would plausibly lack or constrain professional agency.

The view of the professional, and of professional practice, here is clearly one in which stable, specialist expertise is crucial but insufficient. In partnership practice, professional work implies knowledge work. This knowledge work is relational and emergent and relies on a capacity to recognise and respond to epistemic demands. This capacity cannot be separated from the way in which the objects of work are framed and the motives that direct this framing. What appears to be crucial, from the analysis of these handover activities, is that the objects take on a particular quality. This quality reflects the various hues of epistemic objects as described by Miettinen and Virkkunen (2005) and Knorr Cetina (2001). Rather than engaging in an impossible chase for complete, stable, and robust knowledge that “fills up” the gaps needed to act with certainty, these professionals attempt something quite different. They embrace the epistemic dilemmas of partiality, fragility, and instability head-on, exercising agency as they move away from technical, static, and reified understandings of their clients. By working with open-ended, dynamic objects that are simultaneously near (subject to intimate forms of knowledge) and far (a separation from self and practice and always ahead of where one is), they shift from chasing what is impossible to expanding what is possible.

How does this analysis cast new light on the nature of professional practice and agency? Engeström (2007a) describes epistemic levels of mediating artefacts: What? Who, what and when? In which location? How and in which order? Why? Where to? The present analysis reveals how the development and exercise of professional agency is resourced by other questions, too. Implicit in the interactions between professionals in the cases studied were questions such as “What is the status of what we know?”, “How adequate is our existing knowledge for informing what to do next?”, “What else do we need to know?” and “How can such knowledge be produced?” Engeström’s (2007a) system of levels usefully highlights the diverse forms of knowledge work that may take place and their differing connections with how activities unfold. This chapter has revealed how professionals in coproduced partnership practices can recognise and respond to what is demanded of them by engaging in questioning what they know. This constitutes the professional as humble in the face of knowledge and disrupts a seductive but problematic notion of practice in which evidence and professionally legitimised, shared forms of knowledge sew up judgements as to how to act. The narrative exchanges that develop through giving and receiving handover can constitute an artefact that mediates the epistemic work professionals do in figuring out how to proceed.

The view of agency presented here, following Edwards (2016a, b), is not one of individual possession: something one professional has and another does not. Rather, the exercise of agency through activities such as handover arises out of the dialectic between person and practice, individual and collective, and professional and client. It is this dialectic origin that underlies the association between agency and emergent, responsive forms of work that are required in settings where relationships between professionals and clients have been reconfigured in more complex ways. Historically, new forms of relationally complex coproductive work, such as

partnership, herald fresh demands on professionals. This chapter shows that among these requirements is a capacity to recognise and respond to demands that are epistemic in nature. A cultural-historical approach is particularly adept at revealing the exercise of agency in precisely such conditions.

So, what view of professional learning and development arises from such an account? Some useful cues and counterpoints arise when considering Billett and Noble's stance (2017, this volume), as they explicitly frame learning as crucial to the exercise of agency in the context of ongoing work – a point consistent with that presented here (see also Palesy and Billett 2017, this volume, which connects learning with notions of individual dispositions and intentions). They consider how workers learn through personally mediated efforts and actions, describing such learning as premised on how workers “construe what they experience at work and construct knowledge based on how they elect to apply what they know, can do, and value”. Their analysis leads them to assert the bidirectional nature of knowledge sharing between novices and experts and ultimately to advance a notion of “co-working” that asserts the importance of social interaction in personally mediated learning processes.

In the present chapter, learning is understood in terms of changing interpretations of and actions in the world (following Edwards 2005a). This can, of course, apply to particular individuals – the notion of recognising and responding to demands worked with in this chapter might be seen as part of how individuals construe experience. However, a cultural-historical stance seeks to work with individual and collective aspects in dialectic relationships with one another (see Edwards et al. 2017, this volume; Kerosuo 2017, this volume). In this view, learning arises out of the dialectic between person and practice. Thus, the analysis presented here does not have distinctive implications for individual or group learning at work. Rather, the implication is that agency at work requires forms of learning that bring the individual and collective into particular forms of relation with one another, specifically dialectic relations where each shapes and is shaped by the other.

The learning at play here has some specific features that are bound up with the connections to agency described above. Knowledge and practice are both at stake as explicit foci of work. This is central to the recognition of epistemic demands and the responses to them through which professional agency arises. To be clear, this does not mean simply that new knowledge is constructed or learned nor that the work is oriented to and motivated by an issue that arises in practice. It means that professionals, as agentic learners, recognise the need to pose and address questions about the nature, status, and adequacy of the knowledge at their disposal and in doing so bring themselves, individually and collectively, into open-ended relationships with their practice, through which dynamism and possibility come into play and from which agency as a capacity to respond to dilemmas of practice emerges.

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Chapter 8

Proactive Employees: The Relationship Between Work-Related Reflection and Innovative Work Behaviour

Gerhard Messmann and Regina H. Mulder

8.1 Introduction

Responding to changes in the world of work is a core challenge for organisations in order to secure internal functioning, maintain healthy interactions with clients, satisfy customers, and remain competitive (Anderson et al. 2014). As a consequence, organisations have to come up with innovative solutions for pressing issues at all organisational levels. An *innovation* is a new and potentially useful product or process that addresses the problems and challenges of a particular work context and that helps to maintain or improve the current state of this context. Innovative products and processes are the tangible outcomes of *innovation development*, that is, the process during which the development of an innovation is enacted in a specific work context (Messmann and Mulder 2012; West and Farr 1989). Given the relevance of innovations for all kinds of organisations and at all organisational levels, innovations may vary significantly in size and scope. That is, two employees who develop a procedure that enables them to interact more efficiently (e.g. if the nursing staff of a hospital establishes a new routine that makes information sharing between shifts easier) is just as much an innovation as is the new communication device of a large company that provides customers with ground-breaking features.

As a consequence of the importance of innovations, organisations need employees who actively contribute to the development of innovations, for instance, by proactively

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challenging established but insufficient routines. In order for employees to be capable of making meaningful contributions to innovation development, they have to invest in their *professional development*. In this regard, it is important to take into account that a large part of employees' professional development emerges from informal learning activities at work (Felstead et al. 2005; Mulder 2013; Raemdonck et al. 2014). However, not all activities that are carried out at work are learning activities. That is, work activities must contain an inherent learning potential in the form of new information or new experiences that provide a basis for employees to extend their competences. In addition, reflection on the new information or new experiences is necessary for actual learning to occur (Kolodner 1997). Note that with *competences* we refer to "integrated pieces of knowledge, skills and attitudes" (Baartman and De Bruijn 2011, p. 126) that enable individuals "to successfully handle a certain situation or to complete a certain task" (Ellström 1997, p. 267). The term *professionalism* furthermore emphasises that employees are professionals if they actually use their competences for performing professionally and if they engage in activities for professional development (Messmann et al. 2010).

Employees' contributions to innovation development are referred to as innovative work behaviour, which includes the generation, promotion, and realisation of innovative ideas as well as the exploration of opportunities for innovation development in organisational practice. Employees may directly benefit from innovations if these facilitate the accomplishment of job tasks and improve the fit between job demands and job resources (Janssen 2000; Scott and Bruce 1994). Furthermore, employees may benefit from their involvement in innovation development in terms of their own professional development. That is, because innovation development often includes coming up with new ideas and changing established routines, an involvement in the development of an innovation may lead to new experiences that provide employees with opportunities to develop as professionals. For instance, employees may learn from their contributions to innovation development if they reflect on the ideas they generate and the conversations they engage in during the development of the innovation.

Building on the above considerations about the interconnections between innovation development (as a manifestation of *organisational development*) and professional development, the aim of this chapter is to provide insight into the relationship between work-related reflection and innovative work behaviour as two exemplary behaviours of proactive employees (Parker and Collins 2010). *Proactive employees* are employees who take charge of their organisation's development and of their own professional development. Matching this view, Crant (2000) defines *proactivity* (or *proactive behaviours*) as "taking initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions" (p. 436). Proactive behaviours may be directed towards organisational outcomes (e.g. exploring opportunities for creating an effective work environment) or towards individual outcomes (e.g. seeking feedback for improving one's performance). In a similar fashion, an active orientation towards employees' engagement in work behaviours is expressed by the construct of agency which is

used in the literature on workplace learning (cf. Eteläpelto et al. 2013). Both proactivity and agency have been conceptualised as either a personal attribute or as concrete behaviour. As the focus of the current chapter is on work-related reflection and innovative work behaviour and, thus, on two interconnected work behaviours, we concentrate on the behavioural side of proactivity and agency. In addition, Harteis and Goller (2014) make a distinction between externally oriented agency and individual-oriented agency which conceptually matches the distinction of proactive behaviours that aim at either organisational outcomes or individual outcomes (Crant 2000).

In our own understanding, externally oriented work behaviours (e.g. innovative work behaviour) that primarily aim at organisational outcomes not only lead to *organisational development* but also to *professional development*. For instance, through innovative work behaviour, employees intentionally contribute to the development of innovations in organisational practice. As this engagement involves leaving the path of established routines and the generation of new ideas and solutions, employees will likely benefit from this engagement in terms of developing as professionals. Likewise, individual-oriented work behaviours (e.g. work-related reflection) that primarily aim at individual outcomes not only provide a means for one's development as a professional but also facilitate and contribute to organisational development. For instance, through *work-related reflection* employees may intentionally regulate their work-related goals and strategies in order to facilitate the accomplishment of their work tasks. Simultaneously, they become more flexible in using reflection as a driver for coping with future situations and tasks. Based on the idea that proactive behaviours may simultaneously contribute to organisational and professional development, it is an important next step to investigate interconnections among different proactive behaviours and gain insight into how these behaviours may co-occur and facilitate each other.

In this chapter, we synthesise findings from four original studies in which we investigated the relationship between aspects of work-related reflection and innovative work behaviour. In these studies, we addressed several gaps in existing research. Firstly, previous research on innovative work behaviour hardly paid any attention to the question how employees can cope with the complexity of developing an innovation. Secondly, research on innovative work behaviour only partly captured the potential of individual contributions to innovation development for employees' professional development. Thirdly, while focusing on individual and contextual determinants of innovative work behaviour, behavioural antecedents of innovative work behaviour were neglected. Work-related reflection plays a central role in relation to all these gaps, and the current chapter will discuss how our original studies (Messmann and Mulder 2011, 2012, 2015a; Messmann et al. 2010) contributed to closing these gaps. Based on the synthesis of our original findings, we derive practical implications for fostering work-related reflection and innovative work behaviour and illustrate the crucial role of reflection as a driver for the accomplishment of work tasks, for professional development, and for facilitating proactive behaviours.

8.2 Innovative Work Behaviour: Employee Contributions to Innovation Development

In this section, we take a closer look at the dynamic, context-bound nature of innovation development. Subsequently, we illustrate the role that employees' innovative work behaviour and their work-related reflection during the development of an innovation (i.e. innovation-specific reflection) play as a driver for innovation development. Figure 8.1 provides a simplified, schematic representation of different interconnected layers that have to be taken into account in relation to the development of an innovation. These layers include the role of individual contributions to innovation development (i.e. innovative work behaviour), implications of the context-bound nature of innovation development, and the role of work-related reflection (encompassing innovation-specific reflection and reflection during daily work) as a driver for the development of innovations.

8.2.1 *Employee Contributions to Innovation Development*

The term *innovation* refers to new, adequate, and applicable products and processes as outcomes of innovation development that are potentially beneficial for a particular social or organisational work context (Messmann and Mulder 2012; West and Farr 1989). Products may encompass physical objects, material artefacts, or intellectual descriptions. Processes may include practices, services, or procedures. Furthermore, such innovative outcomes may differ significantly regarding their scope and, accordingly, the impact they have on the status quo of organisational work tasks and routines (Janssen et al. 2004).

Nevertheless, the common denominator of all processes of *innovation development* is that they require contributions of employees who create and implement innovative ideas in organisational practice. As illustrated in Fig. 8.1, we distinguish four key *prerequisites for innovation development* (cf. Kanter 1988). For innovation development, *ideas* that address existing needs or problems in the work context have to be created. Furthermore, a group of employees who similarly value the envisioned innovation has to provide *support* for innovation development (e.g. through providing expertise or sociopolitical backing). In addition, existing needs and problems in the work context have to be recognised as *opportunities* for developing an innovation. And the persons who are involved in innovation development have to develop a *prototype* of the innovation that can be experienced and examined by others.

Although these prerequisites partly build on each other, it is important to take into account that innovation development is rather chaotic and intuitive than orderly and linear (Marinova and Phillimore 2003). That is, the necessary contributions for accomplishing the prerequisites for innovation development can overlap and co-occur (Dorenbosch et al. 2005; Lubart 2001). Kanter (1988) emphasises that the

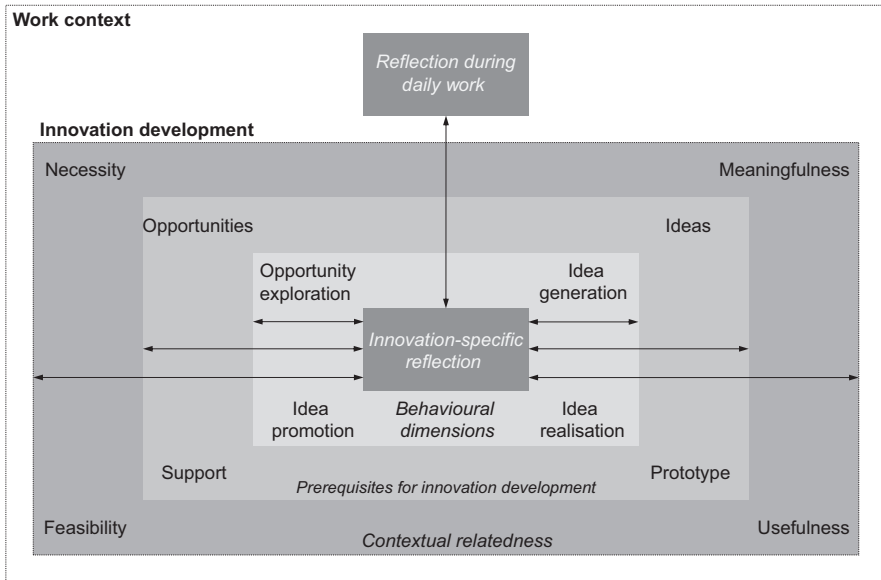


Fig. 8.1 Schematic representation of the relationship between work-related reflection and innovative work behaviour

different prerequisites for innovation development are highly interdependent and can only be enacted through contributions of employees who take responsibility for their accomplishment. As a consequence of this interdependence and the fundamental role of employees, innovation development is highly dynamic and context-bound (Messmann and Mulder 2012).

8.2.2 Conceptualising Innovative Work Behaviour

In accordance with the outlined prerequisites for innovation development, the construct of *innovative work behaviour* is defined as “the sum of all physical and cognitive work activities employees carry out in their work context, either individually or in social interaction, in order to accomplish a set of interdependent innovation tasks required for the development of an innovation” (Messmann and Mulder 2012, p. 45). In conceptualisations of innovative work behaviour (De Jong and Den Hartog 2010; Dorenbosch et al. 2005; Janssen 2000; Messmann and Mulder 2012; Scott and Bruce 1994), the dimensions idea generation, idea promotion, opportunity exploration, and idea realisation are distinguished. Figure 8.1 illustrates how these *behavioural dimensions* are linked to the above-mentioned prerequisites for innovation development (i.e. ideas, support, opportunities, and prototype). *Idea generation* encompasses the explication of ideas that appropriately address the needs and problems

in the work context. This requires that ideas can be meaningfully applied in the work context and, thus, are adequate for the persons who will be affected by the innovation. *Idea promotion* refers to assembling a group of collaborators who provide support for innovation development. This includes persons who take responsibility for the progress of innovation development as well as key persons who provide permissions, resources, and sociopolitical backing for realising the innovation. *Opportunity exploration* includes the recognition and exploration of opportunities for the development of an innovation based on existing needs and problems in the work context. Such opportunities may, for instance, reside in recent changes in one's workplace, organisational unit, or the wider organisation. *Idea realisation* involves transforming innovative ideas into tangible outcomes that can be experienced by others. This means that a physical or intellectual prototype of the innovation is developed and critically examined during an initial application in organisational practice.

8.2.3 *The Dynamic, Context-Bound Nature of Innovative Work Behaviour*

Being embedded into the development of an innovation, employees' innovative work behaviour is highly dynamic and context-bound (cf. Messmann and Mulder 2012). *Innovative work behaviour* is dynamic because of the interdependencies among the prerequisites for innovation development that cannot be viewed in isolation from each other (i.e. changes concerning one prerequisite affect all other prerequisites). As a consequence of these interdependencies, the behavioural dimensions of innovative work behaviour and employees' corresponding activities during the development of an innovation do not follow a sequence. For instance, idea promotion may take place first before an assembled group of contributors will explore opportunities or elaborate raw versions of an idea. In a similar vein, critical examinations during idea realisation may lead to the identification of additional needs and, thus, lead to changes of both the initial ideas and the persons involved. Innovative work behaviour furthermore is dynamic because of the social interactions that have to take place for the development of an innovation (i.e. not every aspect of innovative work behaviour necessarily can or has to be carried out by every person involved in innovation development). Accordingly, there are many interconnected activities of different persons at different points in time. These interconnections enable continuity for the persons involved in innovation development, but at the same time, they raise the complexity of innovation development.

The *contextual relatedness* of *innovation development* (see Fig. 8.1) is visible in both the prerequisites for innovation development and the corresponding behavioural dimensions of innovative work behaviour. Firstly, whether ideas for an innovation are considered innovative depends on subjective attributions of *meaningfulness* by the persons affected by the envisioned innovation. That is, there has to be an agreement that the envisioned innovation has the potential to make a meaningful

contribution to the practice in a particular work context. Secondly, whether an opportunity to develop an innovation exists or is recognised depends on the perception that there is a *necessity* to change or improve something in a particular work context. This perception in turn depends on individuals' needs and problems and the characteristics of their surrounding work environment, which shape their interpretation of the current situation. Thirdly, the *feasibility* of developing an innovation strongly depends on the practical and sociopolitical support that is available in the work context. And finally, whether a prototype of the innovation will succeed the critical examination by different persons who are affected by the innovation strongly depends on whether the *usefulness* of the innovation can be experienced or anticipated.

8.2.4 The Need for Innovation-Specific Reflection

Employees who are involved in innovation development have to become aware of the dynamic, context-bound nature of innovative work behaviour. That is, they have to understand the complex interactions between involved persons, their activities, corresponding outcomes, and the surrounding context which shape and give meaning to the development of an innovation. In order to make these often implicit aspects of innovation development accessible, employees have to reflect throughout the entire development of an innovation (Messmann and Mulder 2012; West 2000).

We refer to this as innovation-specific reflection, which represents an aspect of work-related reflection that takes place in the work context in specific relation to innovation development (see Fig. 8.1). *Innovation-specific reflection* includes an examination of the interdependencies and contextual relatedness of the prerequisites for innovation development and an examination of the interconnections among the behavioural dimensions of innovative work behaviour (Messmann and Mulder 2012). Through innovation-specific reflection, employees may facilitate the development of the current innovation as well as gain an improved understanding for developing innovations in the future. In addition, through properly carrying out innovation-specific reflection, employees can improve at reflecting on their work experiences, which is useful for coping with challenging work situations and tasks in the future. Figure 8.1 illustrates the crucial role of innovation-specific reflection for becoming aware of the different layers of innovation development, that is, for understanding the interconnections among the behavioural dimensions of innovative work behaviour, the interdependencies among the prerequisites for innovation development, and the relationship between these aspects of innovation development and the surrounding work context.

Note that we make a distinction between employees' engagement in innovation development and their engagement in everything that is not related to innovation development as two separate yet complementary aspects of work behaviour employees carry out in their work context (see Fig. 8.1). In accordance with this distinction, *work-related reflection* encompasses the complementary aspects of

innovation-specific reflection that takes place during innovation development and *reflection during daily work* (i.e. not during innovation development). Both aspects of work-related reflection can enhance innovative work behaviour. That is, in addition to the outlined immediate facilitation of innovative work behaviour through innovation-specific reflection, reflection during daily work enables the conduct of innovative work behaviour indirectly. That is, by regularly reflecting during daily work, employees may improve their *flexibility* to use reflection for coping with more challenging situations and tasks such as the development of an innovation (Messmann and Mulder 2015a). These two examples of facilitative effects of work-related reflection highlight its importance for enhancing the conduct of work behaviours. The next section therefore elaborates the construct of work-related reflection in more detail.

8.3 Work-Related Reflection as a Facilitator for Work Behaviour

8.3.1 Conceptualising Work-Related Reflection

Work-related reflection refers to all cognitive activities employees carry out to examine work-related experiences with the intention of becoming aware of crucial but often implicit aspects that may impact the accomplishment of work tasks (Boud 2006; Høyrup 2004; Messmann and Mulder 2015a; Van Woerkom 2004). Work-related reflection may be facilitated by physical activities with a reflective purpose such as collecting further information about particular work experiences or seeking the opinion of others (cf. Messmann and Mulder 2015b). Concerning the *time* of reflection, work-related reflection may take place during the accomplishment of a particular task in order to monitor and adjust task accomplishment (i.e. reflection in action). Or work-related reflection may take place before or after engaging in a task in order to strategically plan or evaluate task accomplishment (i.e. reflection on action) (Schön 1983). Regarding the *setting* (Mulder 2013), employees may reflect alone without any social interaction taking place. Or employees may reflect in a social setting such as the context of a work team (Leicher and Mulder 2016; Messmann and Mulder 2015b).

Moreover, different *objects* of work-related reflection (Messmann and Mulder 2015a) can be distinguished (see Fig. 8.1). That is, work-related reflection can be related to employees' work tasks (task-related reflection), the context surrounding their work tasks (context-related reflection), and the competences available and required for accomplishing their work tasks (competence-related reflection).

Task-related reflection involves the reflection on work tasks and all aspects that are immediately related to the accomplishment of work tasks. This may include task characteristics and associated goals, situational characteristics, potential courses of action, consequential work activities, and corresponding outcomes (Messmann and Mulder 2015a).

Context-related reflection refers to the reflection on the work environment that is surrounding the accomplishment of work tasks. This may include available personal and material resources, underlying values, as well as expectations, standards, and requirements concerning task accomplishment and corresponding outcomes (Van Woerkom 2004).

Competence-related reflection relates to the reflection on one's current competences, competence requirements in one's professional field of work, and required competences for accomplishing specific work tasks (Kauffeld et al. 2007). By reflecting on these aspects, competence gaps can be identified that, in turn, can lead to further reflection on one's professional identity and necessary activities for professional development.

In the context of our studies that are synthesised in this chapter (see below), the focus was on task-related reflection that takes place either as *innovation-specific reflection* or as *reflection during daily work*. Taking into account that both context-related and competence-related reflection are closely related to the accomplishment of work tasks and, thus, to task-related reflection, we solely addressed this latter aspect of work-related reflection.

8.3.2 Reflection as a Part of Work

In order to shed further light on how *work-related reflection* enables employees to adjust or improve the accomplishment and outcomes of their work tasks, theoretical models are needed that explain how reflection is integrated into employees' work behaviour, that is, how different activities and corresponding outcomes may be linked over time through reflection. An understanding of how such links are established can be attained by drawing on two models of experiential learning which complementarily address the integration of reflection into work behaviour from an activity perspective (Kolb 1984) and from a cognitive perspective (Kolodner 1997).

8.3.2.1 The Experiential Learning Cycle

Kolb (1984) provides a cyclical model of learning from experience through an alteration of activities related to "making experiences" and to actively "processing experiences": As a starting point, a concrete experience is made by engaging in the accomplishment of a work task through carrying out relevant work activities and producing subsequent outcomes. If this concrete experience is not fully consistent with one's initial expectations, this mismatch is a trigger for reflection. Reflection may involve various aspects such as reflecting on previous experiences or reflecting on a discussion concerning underlying expectations. Through reflection, a better understanding of the perceived inconsistencies is attained and consequences for adjusting and refining strategies, concrete activities, and corresponding expectations for future situations are derived.

These adjustments are then tested in relation to a similar task which, in turn, leads to a new concrete experience.

Kolb's experiential learning cycle illustrates how employees may use reflection to build on their past experiences with tasks, activities, and situations for facilitating the accomplishment of work tasks with similar contextual features and task requirements. Hence, it adds to our understanding of how individuals may use reflection to establish links between activities and their outcomes over time. However, the cognitive processes underlying reflection and, thus, the integration of new knowledge, skills, and attitudes are hardly elaborated.

8.3.2.2 The Case-Based Reasoning Cycle

The model of case-based reasoning (Kolodner 1997) provides a cognitive explanation for how the accomplishment of current tasks is facilitated by past experiences with similar tasks (i.e. cases). Cases are generalised episodes that are dynamically stored in long-term memory and that result from a series of experiences with similar tasks and situations. When involved in the accomplishment of a task, employees may recall an episodic case that has similar parameters as the current task. The recalled case is then further analysed concerning its usefulness for dealing with the current task. Subsequently, a strategy for coping with the current task is adapted from the recalled case and used to accomplish the current task. Individuals then reflect whether the new experience is congruent with their episodic case. Based on this reflection, the new experience is used to update the stored episodic case. Through updating episodic cases after every subsequent experience, cases become increasingly generalised, that is, less context-specific representations of competent task accomplishment.

Kolodner's case-based reasoning cycle provides us with an understanding of the cognitive representation of experiences that result from engaging in the accomplishment of work tasks. It furthermore adds to our understanding of the cognitive processes that take place when individuals use reflection for adapting prior experiences with particular tasks and situations as basis for accomplishing current tasks. Likewise, the model helps to grasp the cognitive processes that take place when reflection is used to evaluate the accomplishment of a current task in order to improve one's readiness for dealing with similar tasks in the future. The case-based reasoning cycle thus highlights how reflection enables individuals to become increasingly flexible in accomplishing work tasks across different contexts and situations.

In conclusion, the illustrated models of experiential learning outline how employees may use reflection to establish connections between (sets of) activities and outcomes over time (e.g. understanding which activity led to which outcome or how previous activities and their outcomes affect a current activity). The models furthermore explain how reflection may lead to an awareness for causes and effects in relation to one's work behaviour and how this awareness can be used to

increase one's *flexibility* for approaching more challenging tasks and situations, such as innovation development, in the future.

8.4 Studies on the Relationship Between Work-Related Reflection and Innovative Work Behaviour

Having analysed the relationship between work-related reflection and innovative work behaviour from a theoretical angle, we will now turn to empirical investigations in which we deliberately addressed this relationship (see Table 8.1 for an overview). Specifically, our studies focused on the questions how employees' innovative work behaviour is enhanced by reflection during daily work and innovation-specific reflection, respectively.

8.4.1 *Enhancing Innovative Work Behaviour Through Reflection During Daily Work*

In accordance with the above-outlined idea that reflection during daily work increases employees' flexibility to cope with unfamiliar, unexpected, or ambiguous work situations and tasks, we carried out two studies on the relationship between *reflection during daily work* and *innovative work behaviour* (Messmann and Mulder 2015a; Messmann et al. 2010).

The first quantitative study (Messmann et al. 2010) took a broad focus on vocational education teachers' professionalism. In accordance with our definition of professionalism, we incorporated perceptions of professional knowledge (as a proxy for competences), professional performance, and professional development. The study addressed the role of professionalism for enhancing innovative work behaviour inside and outside the classroom. The underlying assumption of the study was that engagement in professional development including work-related reflection would be the most important predictor of innovative work behaviour. By contrast, we assumed that professional knowledge and performance, although an important basis, would be less crucial predictors. Work-related reflection was conceptualised as reflection on teaching performance and, accordingly, as an aspect of professional development (alongside physical learning activities). Using a questionnaire, we collected data on innovative work behaviour and on different aspects of professional knowledge, performance, and development from $N = 60$ vocational education teachers. Subsequently, we carried out regression analyses to find out about the relative importance of the different components of professional knowledge, performance, and development for facilitating innovative work behaviour inside and outside the classroom.

Table 8.1 Overview of studies on the relationship between work-related reflection and innovative work behaviour

Study ^a	Participants	Sample size	Methodology	Contribution	Findings	Implications
Messmann et al. (2010)	Vocational education teachers	N = 60	Quantitative questionnaire study	Characteristics of professionalism as determinants of innovative work behaviour	Aspects of professional development predict innovative work behaviour better than professional knowledge and performance	Professional development (including work-related reflection) is crucial for adapting professional knowledge and performance to different contexts and situations
Messmann and Mulder (2015a)	Secondary education teachers	N = 67	Quantitative questionnaire study	Reflection during daily work as a determinant of innovative work behaviour	Positive effects of reflection during daily work on innovative work behaviour	Reflection during daily work increases the flexibility to cope with the challenges of developing an innovation
Messmann and Mulder (2011)	Vocational education teachers	N = 9	Qualitative interview study	Exploring work activities (including reflective activities) during innovation development	Reflection is an integrative element throughout the development of an innovation	Reflection functions as a driver for innovation development and additionally leads to professional development
Messmann and Mulder (2012)	Employees of a production company (subsample 1); vocational education teachers (subsample 2)	N = 419 (154/265 in subsample 1/2)	Quantitative questionnaire study	Measuring innovation-specific reflection and innovative work behaviour as behavioural prerequisites for innovation development	Substantial correlations between innovation-specific reflection and innovative work behaviour	Innovation-specific reflection serves the purposes of facilitating both innovation development and professional development

Note. ^aStudies ordered by appearance in the text

The results of the study indicated that, although teachers' perceptions of professional knowledge and performance were an important basis for innovative work behaviour, they were not as important determinants as teachers' engagement in professional development including work-related reflection. In accordance with theoretical models of experiential learning (Kolb 1984; Kolodner 1997), the findings of the study support the crucial role of work-related reflection for professional development and, subsequently, for enabling innovative work behaviour. Through engaging in activities for professional development, employees become increasingly flexible for adapting to different and potentially challenging tasks and situations that may require innovative approaches and solutions.

Building on this insight, a second quantitative study (Messmann and Mulder 2015a) took a closer look at different aspects of secondary education teachers' work-related reflection and their respective effect on innovative work behaviour. Work-related reflection was conceptualised as reflection on work tasks, reflection on the social context, and reflection on task performance. Innovative work behaviour was conceptualised as engagement in idea generation, idea promotion, opportunity exploration, and idea realisation. Similar to the previous study (Messmann et al. 2010), the underlying assumption of this study was that work-related reflection prepares employees for developing the flexibility that is necessary to cope with the demands and uncertainties that accompany innovation development. Furthermore, we hypothesised that reflection on work tasks and on the social context before or after performing a task would facilitate reflection on task performance. Using a questionnaire, we gathered data on work-related reflection and innovative work behaviour from $N = 67$ secondary education teachers. Subsequently, we applied path analysis to test the hypothesised effects of work-related reflection on innovative work behaviour.

The results of the study showed that all three dimensions of work-related reflection were predictors of innovative work behaviour. Specifically, we found that reflection on task performance directly affected innovative work behaviour while reflection on work tasks and the social context were indirectly connected to innovative work behaviour through reflection on task performance. The study supports the idea that reflection during daily work prepares employees for innovative work behaviour by fostering the flexibility to accomplish tasks across a variety of contexts and situations. Through regular and proper reflection during daily work, employees become better at reflection which enables them to flexibly cope with work-related challenges such as those imposed by the development of an innovation.

8.4.2 Facilitating Innovative Work Behaviour Through Innovation-Specific Reflection

Building on the notion that employees who are involved in innovation development have to cope with the dynamic, context-bound nature of innovation development, we carried out two studies that addressed the role of *innovation-specific reflection* as a facilitator for *innovative work behaviour* (Messmann and Mulder 2011, 2012).

The first qualitative study (Messmann and Mulder 2011) aimed at exploring the dynamics of innovation development from a domain-specific perspective of vocational education teachers' work context. The study aimed at exploring work activities that vocational education teachers carried out during the development of a specific innovation in their work context. In structured interviews, $N = 9$ vocational education teachers were first asked to report cases of innovation development in which they had been involved. Based on one of these critical incidents of innovation development, the teachers were then asked to recall concrete activities they carried out during the development of this particular innovation. Using specific dimensions of innovative work behaviour (i.e. idea generation, idea promotion, and idea realisation) for categorising the reported activities, we gained insight into relevant activities for developing an innovation in the context of vocational education teachers' work.

Besides revealing the complex relationships among the dimensions of innovative work behaviour, the findings of the study highlighted the central role of innovation-specific reflection as an integrative element throughout the development of an innovation. In accordance with theoretical models of experiential learning (Kolb 1984; Kolodner 1997), reflection was present in several ways, for instance, as making use of past experiences, as exchanging and thinking about ideas, or as adjusting the outcomes of innovation development. These examples of activities show that innovation-specific reflection cannot be considered in isolation from the development of an innovation. That is, an activity such as making use of past experiences (coded as idea generation in the study) was not only carried out to generate ideas for coping with a current problem but at the same time contributed to the improvement of the teachers' case memory by integrating a current experience. The study therefore supports the assumption that innovation-specific reflection is a driver and an integrative element for the advancement of innovation development and for employees' professional development.

Building on this insight, the relationship between innovation-specific reflection and innovative work behaviour was addressed in a second quantitative study (Messmann and Mulder 2012). Collecting data from two different samples (i.e. $N = 154$ employees of a production company and $N = 265$ vocational education teachers), the study aimed at the development and validation of an instrument for measuring innovative work behaviour with innovation-specific reflection being a core element of that instrument. Innovative work behaviour was conceptualised as idea generation, idea promotion, opportunity exploration, and idea realisation. Innovation-specific reflection was conceptualised as task-related reflection during the development of an innovation. In order to find out about the relationship between innovation-specific reflection and innovative work behaviour, correlations were examined.

The results of this study showed medium to strong correlations between innovation-specific reflection and innovative work behaviour for both samples. In accordance with the findings of the previous qualitative study (Messmann and Mulder 2011), this specific study highlights the role of innovation-specific reflection as an essential facilitator for innovative work behaviour. In accordance with the outlined models of experiential learning, innovation-specific reflection provides

employees with an understanding of how different prerequisites for innovation development are related, how their own contributions relate to the accomplishment of one or more of these prerequisites, and how the work context influences the development of an innovation and the different outcomes that emerge during this process. In addition, innovation-specific reflection may enable employees to develop innovations in the future.

8.5 Discussion

8.5.1 *The Relationship Between Work-Related Reflection and Innovative Work Behaviour*

The aim of this chapter was to provide insight into the relationship between *work-related reflection* and *innovative work behaviour* as well as to illustrate the role of these two behaviours for organisational and professional development. We addressed this issue by integrating findings from four original studies. The studies differed concerning their methodological approach (three quantitative questionnaire studies and one qualitative interview study) and in their perspective on work-related reflection. Regarding work-related reflection, two studies focussed on innovation-specific reflection, that is, reflection that takes place during innovation development (Messmann and Mulder 2011, 2012). And two studies concentrated on reflection during daily work, that is, reflection that takes place in relation to the accomplishment of everyday work tasks (Messmann and Mulder 2015a; Messmann et al. 2010). All four studies provide supportive evidence for the positive relationship between work-related reflection and innovative work behaviour. Moreover, by revisiting the findings of these studies, we were able to elicit the complex relationships illustrated in Fig. 8.1, that is, the relationships (a) between the daily work context and the innovation context, (b) between reflection during daily work and innovation-specific reflection, and (c) between these two manifestations of work-related reflection and innovative work behaviour.

On basis of our synthesis, we may conclude that innovation-specific reflection is important for employees to become aware of the interconnections among the behavioural dimensions of innovative work behaviour and among the corresponding prerequisites for innovation development. In addition, innovation-specific reflection is important for understanding the contextual relatedness of innovation development. Moreover, reflection during daily work is crucial in order to prepare oneself for dealing with less routine situations and tasks, such as the development of an innovation, that require flexibility. The latter aspect also implies that reflection during daily work and innovation-specific reflection are interconnected through the development of increasing *flexibility* for using reflection as a facilitator for work behaviours across a variety of tasks, situations, and contexts, as emphasised by the outlined models of experiential learning (Kolb 1984; Kolodner 1997).

8.5.2 *Fostering Work-Related Reflection and Innovative Work Behaviour*

As a consequence of the importance of both work-related reflection and innovative work behaviour for organisational and professional development, fostering these behaviours is an important issue in organisations. From existing research (Hetzner et al. 2015; Messmann and Mulder 2014, 2015b), we know that work-related reflection and innovative work behaviour can be enhanced by creating work environments that, for instance, provide autonomy, support, and safety. From these studies, we also know that individual perceptions of self-efficacy, psychological empowerment, or readiness to change enhance employees' engagement in work-related reflection and innovative work behaviour.

In order to make use of this insight, practical measures at all levels of an organisation are necessary. At employee level, the daily interaction with colleagues and one's immediate supervisor may create a positive work climate in which employees feel safe to bring up critical issues or in which they sense that support is available when obstacles have to be overcome. Furthermore, at the level of the organisation and its units, structural measures may enhance the perception of a positive work climate. Supervisors, team leaders, and management could, for instance, establish designated spaces and events that allow discussing problems, eliciting needs, and exchanging ideas. This may take place in different kinds of meetings (e.g. staff meetings). In addition, it may be even more important that organisational members with a leadership function send the message that each employee's *professional development* is critical for *organisational development*. Furthermore, these social and structural factors may provide an essential basis for enhancing individual factors, such as perceptions of psychological empowerment, which are the long-term result of work experiences that signal employees that they are valued organisational members.

8.5.3 *Proactive Employees: Taking Charge of Organisational and Professional Development*

In the introduction of this chapter, we characterised *proactive employees* as employees who take charge of their organisation's and their own development by contributing to the development of innovations and by regularly reflecting on their work experiences. We also linked these two manifestations of *proactivity* (Crant 2000; Parker and Collins 2010) to the conceptually related construct of agency (Eteläpelto et al. 2013; Harteis and Goller 2014) and pointed out that proactive, agentic behaviours often contribute to the accomplishment of both individual and organisational outcomes. In essence, we believe that *professional development* and *organisational development* mutually depend on each other. This view was supported by the findings of our studies on the relationship between work-related reflection and innovative work behaviour, which illustrated how organisational development (in our case innovation development) and professional development may result from the same

work behaviours. Specifically, our synthesis implies that employees who proactively seek to develop an innovation (for their organisation's and probably their own benefit) can more easily do so if they reflect before, during, and after the development of an innovation. And through reflecting on innovation development they will inevitable benefit as professionals in terms of developing knowledge and skills related to the topic of the innovation, to the process of innovation development, and to proper techniques for using reflection. Work-related reflection and innovative work behaviour thus are exemplary behaviours of proactive employees.

In accordance with the idea that an active orientation towards organisational and professional development is exemplary for proactive employees (Crant 2000), research on proactivity provides multiple examples of other *proactive behaviours*, such as personal initiative and work engagement, as well as their relationships to both *work-related reflection* and *innovative work behaviour* (e.g. De Spiegelaere et al. 2014; Hetzner et al. 2012). Addressing the variety of different proactive behaviours, Parker and Collins (2010), who investigated overlaps between different proactive behaviours, such as innovative work behaviour, taking charge, voice behaviour, and feedback-seeking, claimed that conceptual integration is necessary to attain a clearer view on what may be referred to as proactive behaviour. Such a conceptual integration, in turn, may be used as a starting point for the structural facilitation of proactive behaviours. For instance, by developing training programmes and informal measures that foster leadership competences, the creation of work climates that enhance an active work orientation of employees could be induced.

In closing, we believe that *work-related reflection* is at the heart of what characterises proactive employees. Among work behaviours that are exemplary for proactive employees, work-related reflection stands out because of its integrative quality. As illustrated by means of its relationship to innovative work behaviour, work-related reflection functions as a facilitator (a) for the accomplishment of work tasks by enabling employees to make use of experiences with similar tasks and situations, (b) for professional development by enabling employees to learn from every consecutive experience with similar tasks and situations, and (c) for other (proactive) work behaviours by enabling an explication of tacit aspects related to the conduct of these behaviours. By enabling and encouraging employees to use work-related reflection as a means for recognising needs and opportunities for change and improvement, proactive contributions, such as introducing new products and processes or shaping one's work environment, can be meaningfully fostered.

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Chapter 9

The Reciprocal Relationship Between Emotions and Agency in the Workplace

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9.1 Introduction

In workplace studies, emotions have gained considerable attention in recent decades. Previously, workplaces were taken to be emotionally neutral in nature, hence requiring an emotionally neutral performance from employees and especially from leaders. This paradigm was based on the assumption that human behaviour in organisational settings follows rational rules and is mainly guided by cognitive processes (e.g. Ashforth and Humphrey 1995; Ashkanasy et al. 2000). However, recent research has shown that emotions play a significant role in workplace settings, organisational behaviour, and leadership (Gooty et al. 2010; Koning and Van Kleef 2015).

In recent years, a number of studies have focused on emotions in the workplace and in leadership (e.g. Connelly and Gooty 2015). It has been found that emotions propel individuals to act in social situations (Ashkanasy et al. 2000) and that positive emotions have a clear connection, for example, with organisational productivity, innovativeness, effectiveness, and high-quality collaboration (Ashkanasy and Asthon-James 2007; Hakanen et al. 2006). By contrast, negative emotions seem to increase stress and decrease individual and organisational performance (Barsade and Gibson 2007; Koning and Van Kleef 2015). Despite the research conducted, little work has been done on emotional aspects as they pertain to the professional agency of employees and leaders in working life. So far, professional agency has been understood mainly in terms of rational activity aimed at influencing a current state of affairs (e.g. Giddens 1984; Harteis and Goller 2014). Therefore, we are still

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in need of a better understanding of how, among employees and leaders, *emotions are embedded in agentic practice* in the workplace.

The present study focused on emotions and how they relate to professional agency. Our interest was also in elaborating the similarities and differences in leaders' and employees' accounts of their emotions and their agency. Thus, we here report on a meta-synthesis (see, e.g., Sandelowski and Barroso 2006) of findings on employees' and leaders' emotions in the enactment of agency at work. The studies, conducted in Finland, were on education and health-care organisations. We utilised five previous empirical studies conducted by us (see Table 9.1, Sect. 9.4.1). These did indeed illustrate distinct aspects of professional agency and emotions in the workplace. However, as separate studies, they did not provide a comprehensive picture of the professional agency and emotions, nor of the relationships that might exist between them. It will be noted that this meta-synthesis was based purely on our own studies, precisely because there seems to be no other research on the interconnections between professional agency and emotions at work.

9.2 Theoretical Background

9.2.1 Professional Agency

Professional agency has been increasingly theorised in the domains of working life studies and professional learning (e.g. Harteis and Goller 2014; Smith 2017, this volume). In general, professional agency includes the notion that people are active beings, exercising at least some degree of control over their lives (Biesta and Tedder 2007). Agency often refers to subjects' purposeful decisions and intentional actions; hence the concept of agency includes notions of power, control, and influence (Billett 2008; and Somerville 2006; Paloniemi and Collin 2012; Vähäsantanen 2015). Such influence can be directed at one's work, career, and identity and further to institutional and societal circumstances. All in all, it seems reasonable to talk about agency as existing only when the individual has the power to act – to affect matters, to make decisions and choices, or to bring about some kind of change in a prevailing situation (Eteläpelto et al. 2013).

In this chapter, we adopt certain theoretical assumptions, understanding professional agency as a *behavioural* phenomenon that makes a difference in professional lives (Toom et al. 2015; Vähäsantanen 2015). This means that we understand professional agency as individual or collective actions aimed at influencing and making a difference in the workplace. We thus emphasise professional agency as a power *to do* something, rather than seeing it merely as a personal capacity or characteristic (see Goller and Harteis 2017, this volume). More precisely, we adopt the theoretical ideas associated with the *subject-centred sociocultural (SCSC) approach* (Eteläpelto et al. 2013; Eteläpelto 2017, this volume). This views professional agency as enacted

by both individuals and groups; the enactment takes place through influencing, making choices and decisions, and taking stances in ways that affect individual and collective professional identity and work practices. Such an understanding further includes the notion that agency is enacted in the form of active decisions and efforts relative to professional careers and pathways.

The SCSC approach also emphasises the intertwining relationship between professional agency and identity. Professional identity can be understood as professionals' perception of themselves as professional actors, encompassing their professional interests, ambitions, and commitments (e.g. Davey 2013; Vähäsantanen 2015). In the turbulence of working life, professionals are often forced to reshape their professional identities, and this requires agency. Furthermore, professional identity is not merely an individual level but also a collective phenomenon. Collective (or group) identity refers to shared beliefs, missions, and goals, and it includes the mutual identification and engagement that binds employees together in a social entity (Davey 2013; Pantic 2015). Thus, collective identity encompasses notions of functional professional relationships, group affinity, and identification with the group. Moreover, collective identity and agency are also closely related: collective identity directs groups' collective agency, and conversely collective agency is enacted, for example, when a professional group needs to reshape its position and/or roles within the organisation (Hökkä et al. 2017a).

In addition, the SCSC approach emphasises the interplay between sociocultural conditions and agency. Professional agency is always enacted for certain purposes and within certain historically formed sociocultural and material circumstances; furthermore, it is both constrained and resourced by sociocultural conditions, affordances, and suggestions. Biesta and Tedder (2007) suggest that agency is practised, not so much *in* environments as *through* environmental affordances and social landscapes (see also Evans 2017, this volume). These can include strategies, organisational conditions, cultural practices, and power relations, plus situational demands, constraints, and opportunities (e.g. Billett 2008) and management practices (Hökkä and Vähäsantanen 2014). In public sector organisations, these sociocultural conditions include also aspects such as policy mandates and national standards.

As noted above, professional agency has mainly been conceptualised in terms of rational, cognitively based actions, viewed as goal-oriented activities aiming to influence a current state of affairs (Giddens 1984; Harteis and Goller 2014). However, some emerging ideas view agency not merely as manifested in rational actions but also as comprising emotions (Evans 2017, this volume; Smith 2017, this volume). The neglect of the emotional dimension has been fairly general, even if, for example, Sieben and Wettergren (2010) have suggested that emotions represent a constituting link between social structures and individual agency in working life. Below, we present current understandings of emotions in working life, as they have emerged via organisational studies.

9.2.2 *Emotions at Work*

It is no coincidence that notions of emotions have emerged strongly in the field of workplace and organisational studies (e.g. Humle 2014), given the constantly changing landscape of societies and organisations, with concomitant challenges to organisational practices, individual employees, and leaders. In human-centred work in particular (such as education and health care), emotions are seen as an integral part of the work. Emotions emerge from the relationships that professionals have with students, patients, colleagues, and followers – people whose learning, health, well-being, and productivity are the central purpose of the work. As a consequence, the work done in human-centred domains is closely bound up with the professionals' work communities, social relationships, identities, and emotions.

In organisational studies, one notable trend has been to examine the role of both positive and negative emotions in work contexts (Eberly and Fong 2013; Härtel et al. 2005). Positive emotions like joy and empathy make prosocial behaviours more likely, whereas negative emotions, such as fear, anxiety, and shame, are likely to support antisocial behaviours (Barsade and Gibson 2007). The ability to express and regulate positive and negative emotions in workplaces has turned out to be crucial. Leaders play a particularly important role in creating and maintaining a positive organisational atmosphere. Such an atmosphere has been shown to have a powerful effect, for example, on the well-being of personnel and on the productivity of the organisation (Eberly and Fong 2013; Gooty et al. 2010). In general, positive emotions have been seen to support leader effectiveness and the performance of personnel. Displays of positive emotions by leaders evoke positive emotions in others, through processes of emotional contagion (Barsade and Gibson 2007; Newcombe and Ashkanasy 2002). In transformational situations in particular, positive emotions and affective expressiveness on the part of leaders have proven to be essential (Ashkanasy and Tse 2000). There is also evidence that leaders who display positive emotions are likely to build trustful relationships with employees and are thus able to construct shared visions for the future (Gooty et al. 2010). Moreover, leaders who express positive emotions are generally perceived by employees as more effective than leaders who express negative emotions (Eberly and Fong 2013).

The significance of negative emotions has proven to be more complex than is the case with positive emotions. There is evidence that negative emotions affect leader-subordinate relationships through the spread of negative energy among a group (Barsade 2002) or that they can even poison the entire organisational culture (Aquino et al. 2004). A recent study by Vuori and Huy (2015) showed that the shared emotion of fear among top and middle managers can hinder future-oriented development, through a focus on short-term innovation at the expense of long-term development. However, emotions that can be labelled as negative can also lead to constructive actions, for example, by energising people to oppose injustice and unfair situations within organisations. In line with this, Clancy et al. (2012) noticed that disappointment is connected to the dynamics of blame in organisations, but that when fully appreciated, it can act as a basis for organisational learning. Furthermore,

the emotion of anger can in some cases lead to positive organisational outcomes (Barsade and Gibson 2007).

Although research on emotions in workplaces has expanded, there is still no universally accepted definition of emotions. However, many scholars agree that emotions can be characterised as situational and intense, involving some kind of physiological responses to an event, entity, or person (e.g. Beal et al. 2005; Gooty et al. 2010). In this chapter, we understand emotions as situational and dynamic responses to the events, entities, persons, and social situations encountered in the workplace. However, we also surmise that there are socially shared ways of defining and understanding emotions. Emotions can be seen as socially produced categories/concepts that have the weight of tradition and everyday experience behind them (Russell 2003). Along similar lines, Dirx (2001) points out that emotions are an inseparable part of interpreting and making sense of everyday life. Since the main data for our primary studies consisted of interviews, we have not been able to track transient and situational physiological reactions or immediate emotions. That means that we were unable to know what the employees and leaders were actually “feeling”. Nevertheless, we were able to take into account the verbal expressions of emotions, allowing us to analyse and label them through the employees’ and leaders’ talk. The meta-synthesis that we conducted aimed to give an overview of the variety of emotions connected to the work of employees and middle-management leaders. A prime focus in the present chapter will be on presenting *the most prominent emotions* connected with the enactment of agency within people’s work.

All in all, we understand professional agency as manifested in the agentic actions of individuals and/or groups, aimed at influencing and making a difference in the work. In this acting, professional identity is strongly involved, both as a resource for action and also as an important target to be reshaped amid working life, as the work changes. Up to now, professional agency has been conceptualised particularly in terms of rational, cognitively based actions, and the meaning of emotions has been neglected. However, the crucial meaning of emotions in workplaces is well known. Given the relative lack of research in the field, we see a need to elaborate the connection between professional agency and emotions.

9.3 Research Aim and Questions

Our aim was to investigate emotions within education and health-care organisations, looking in particular at the relationships between emotions and professional agency. Thus, we posed the following research questions:

1. What kinds of emotions can be identified in the accounts of educators (employees) and leaders in connection with their work?
2. What is the relationship between the emotions identified and the enactment of agency in the work?

9.4 Method

We applied a qualitative meta-synthesis approach (Sandelowski and Barroso 2006; Schreiber et al. 1997) in reanalysing the main findings of our five primary empirical studies, focusing on various aspects of emotions and professional agency at work. The qualitative meta-synthesis is a method that can provide a comprehensive picture of findings, drawing on qualitative studies on the same general research topic (Timulak 2009). Thus, by synthesising and generalising from qualitative results, the method aims to develop new knowledge, to gain a fuller understanding of the topic under study, and to make suggestions for actual practice. The research questions for the present meta-synthesis were seen as linking together all the primary studies, seeking thus to gain a fuller picture of the phenomenon.

9.4.1 The Data

The focal areas, the participants, and the methods of the primary studies are depicted in Table 9.1. The participants ($n = 39$) included both employees and leaders, and they came from a variety of professional backgrounds within education and

Table 9.1 Primary studies utilised in the meta-synthesis

	The focus of the study	Participants	Methods
Hökkä et al. (2017b)	Collective agency-promoting leadership in Finnish teacher education.	4 teacher education leaders working in the same department: the head, the vice head, the research leader, and the pedagogical leader.	Video-taped group discussion. Qualitative content analysis.
Hökkä et al. (2013, 2014)	Emotions and agency in leaders' work. Conceptualising emotional agency at work.	11 middle-management leaders (8 females, 3 males) working in hospital and university contexts.	Semi-structured pre- and post-interviews. Qualitative content analysis.
Ursin et al. (2017)	Emotionally loaded identity and agency in Finnish academic work.	8 educators (6 females, 2 males) working in a university.	Semi-structured interviews. Thematic and narrative analysis approaches.
Vähäsantanen and Eteläpelto (2015)	Professional agency, identity, and emotions while leaving one's work organisation.	2 highly educated and experienced educators: a vocational teacher and an adult educator.	Narrative interviews. Thematic and narrative analysis approaches.
Vähäsantanen and Eteläpelto (2011)	Teachers' emotional pathways from the perspectives of identity and agency in the course of a curriculum reform.	14 vocational teachers (8 males, 6 females).	Narrative interviews. Narrative analysis.

health-care organisations. The perspective of the *employees* was gained from interviews with *educators* working in vocational education, adult education, and higher education. The *leaders*, for their part, represent the domains of both higher education and health care. The data were collected via individual interviews, plus one group interview. The primary studies differed from each other in terms of applying different methods of analysis; these included thematic analysis, qualitative content analysis, and narrative analysis.

Interview research can be seen as useful in investigating emotional experiences. Boudens (2005) has argued that emotions are best accessed via means such as narratives, which usually paint a picture of work as it is emotionally experienced, rather than as a series of purely rational procedures. In the primary studies used here, a retrospective approach was applied within the interviews. In other words, the interviewees recalled and talked about their emotions, work practices, identities, and social relationships, reflecting on authentic situations and events in working life. Certain problematic aspects should be noted in using the retrospective approach (e.g. Saldaña 2013). For example, individuals' interpretations of their actions and emotional experiences can change, and they can forget some matters over time.

9.4.2 *The Data Analysis*

The five primary studies revealed aspects of professional agency and emotions, but did not give a comprehensive picture of them nor of the relationships between them. Hence, in our qualitative meta-synthesis, we conducted a *secondary* qualitative analysis of the primary qualitative findings (Sandelowski and Barroso 2006; Timulak 2009). We sought to gain a more comprehensive description of the phenomena through treating the findings of the primary studies as data and focusing on their ambiguities, differences, and commonalities.

The meta-synthesis was implemented in line with the research questions. First of all, we critically reviewed the studies included and carried out an initial coding of the primary findings. In this phase, we coded the findings that encompassed emotional expressions connected to the work, applying previous conceptualisations on the categorising of emotions (e.g. Pekrun et al. 2002). The initial codes were then compared for similarities and differences and grouped into three higher-order categories. Thus we arrived at emotions connected to *professional identity*, *work*, and *social relationships*. There was a certain amount of overlap between these categories, but we considered the distinctions to be justified for the purposes of analysis.

In addressing the second research question (concerning the relations between emotions and professional agency), we utilised also *raw data* from the primary studies. This was possible because the authors involved in the meta-synthesis were also the original authors of the studies in question (cf. Timulak 2009). We first coded the findings on professional agency by extracting the initial findings concerning the enactment of agency at work (or the absence of it). Next, we coded the emotional expressions connected to these extracts. The final phase of the analysis was an interpretative integration of the findings into a final synthesis. Here we

focused on the most prevalent emotions and their connection to the enactment of agency. By categorising and comparing the main findings of the primary studies, together with examples and data extracts, we were able to arrive at a final synthesis encompassing how employees' and leaders' emotions at work are related to the enactment of professional agency.

9.5 Findings

The following sections present our main findings. Sections 9.5.1 and 9.5.2 give an overview of the emotions involved in the work of educators and the relationship between the most prevalent emotions and the enactment of professional agency. Sections 9.5.3 and 9.5.4 cover the same research questions from the leaders' point of view.

9.5.1 *The Emotional Landscape of the Educators' Work*

The findings of the meta-synthesis indicated that the educators expressed a wide variety of emotions in their work (see Table 9.2). The emotions ranged from enthusiasm, enjoyment, and satisfaction to disappointment, dissatisfaction, and exhaustion. Positive emotions, especially satisfaction and enjoyment, emerged in relation to the

Table 9.2 Overview of the emotions within the educators' work

	Positive emotions	Negative emotions
Professional identity	<i>Satisfaction, enjoyment, happiness, a sense of meaningfulness, enthusiasm</i> (opportunities to work in line with one's professional interests and competencies).	<i>Inadequacy, fear of failure, uncertainty</i> (a lack of the competencies needed to work in line with one's ambitions and interests). <i>Disappointment, a sense of unfairness, exhaustion, irritation</i> (a lack of opportunities or time to work in line with one's professional interests and competencies). <i>Confusion</i> (regarding one's professional identity).
Work	<i>Satisfaction, enthusiasm, enjoyment</i> (changing work practices and roles). <i>Satisfaction, enjoyment, a sense of meaningfulness</i> (in autonomous work).	<i>Disappointment, frustration, exhaustion, irritation, a sense of inadequacy</i> (from changing work practices and roles). <i>Anxiety, dissatisfaction, frustration, anger, nervousness</i> (a lack of autonomy, restrictive leadership practices).
Social relationships	<i>Satisfaction, enthusiasm, enjoyment, trust</i> (workable and supportive collegial relationships).	<i>Exhaustion, fear, anxiety</i> (due to inflamed relationships at work).

interviewees' *professional identity* – that is, when the educators were able to work according to their core professional interests and commitments and to utilise their professional competencies (Ursin et al. 2017; Vähäsantanen and Eteläpelto 2015).

In the case of the *changing nature of the work*, it appeared that, on the one hand, satisfaction and enthusiasm (in particular) emerged when the educators gained pleasant experiences related to students' novel learning practices and to the educators' own new roles. On the other hand, there was exhaustion, resulting from a lack of the personal and social resources needed to carry out new tasks (Vähäsantanen and Eteläpelto 2011). In relation to *social relationships*, satisfaction, enthusiasm, and enjoyment were reported, related especially to situations in which the educators had supportive colleagues with whom they could collaborate successfully (Ursin et al. 2017). By contrast, exhaustion emerged from inflamed social relations and a lack of recognition of the work done (Vähäsantanen and Eteläpelto 2015). Inflamed relations with colleagues and leaders also brought about fear and anxiety (Ursin et al. 2017), hindering collaboration in teaching and researching.

9.5.2 The Relationship Between Educators' Emotions and Professional Agency

As noted above, the educators expressed a wide variety of emotions at their work. Not all of these emotions led to the enactment of professional agency. For example, when the educators were satisfied with the opportunities to actualise their professional identity, they did not feel any need to make a change in their professional identities or practices. However, many emotions were closely related to manifestations of professional agency. In the next section, we shall indicate how emotions, especially negative ones, were related to the enactment of professional agency, in terms of both *change-oriented* and *maintenance-oriented* decisions (notably with regard to professional identity, career, and work).

9.5.2.1 Emotions in Crafting Professional Identity

The findings of the meta-synthesis indicated that positive emotions propelled educators to shape their identities, whereas negative emotions brought no change in the educators' identities. Vähäsantanen and Eteläpelto (2011) showed that the educators enacted their professional agency through changing and sustaining their professional identities (in the course of a vocational curriculum reform). They did this on the basis of their individual interpretations of the experiences and emotions they underwent during the reform. These experiences and emotions were undoubtedly related to the teachers' changing work and performance and to the resources available for their work.

To be more precise, this study (Vähäsantanen and Eteläpelto 2011) indicated that positive emotions, such as *satisfaction* and *enthusiasm*, could emerge, related to successful work performance in the educators' changing work and to the students' learning. In this kind of emotionally imbued reform situation, the educators transformed their professional identities (relating to perceptions of their professional roles and ambitions and to students' learning environments), even if their professional identities had initially been in conflict with the reform and they had resisted it. On the other hand, many negative emotions (e.g. *disappointment*, *annoyance*, *exhaustion*) also emerged. For example, disappointment emerged when the educators were not able to carry out their professional tasks properly. This inability was due to the resistance of work organisations, some of whose personnel were responsible for supporting students' learning in the workplace, thus obstructing the training organised by the educators.

The companies postponed the training of workers for the foreseeable future, saying there was not enough time... When we made preliminary arrangements for this training, they were enthusiastic, but it tailed off quickly. It was quite big disappointment at least for me personally.

When negative emotions and unpleasant experiences emerged, the educators were not willing to change their existing professional identity (i.e. their perceptions of the most desired and meaningful tasks) to correspond to the changes in their work or to their new job description. In fact, they strengthened their existing professional identity.

These findings emphasise the point that positive emotions are needed for the shaping of professional identities when work is undergoing change. The study by Vähäsantanen and Eteläpelto (2015) similarly showed that educators did not shape their professional identities easily. When there was an emotionally conflicted relationship between the educators and their work organisations, they decided to resign from the organisation rather than mould their professional preferences to the cultures and suggestions of the work organisation. This point is taken up below.

9.5.2.2 The Reciprocal Relation Between Emotions and Agentic Career Decisions

The overall findings indicated that negative emotions have consequences for professional agency when a person is making a career change. The study by Vähäsantanen and Eteläpelto (2015) highlighted an agentic process resulting from an emotionally troubled relationship between the educator (with a particular professional identity and set of competencies) and the work organisation. From this troubled relationship, negative emotions, such as *anger*, *exhaustion*, *anxiety*, and *dissatisfaction*, emerged. For example, exhaustion emerged from inflamed interpersonal relationships within the work organisation and anxiety from an over-restrictive management culture that discouraged autonomous working and learning. These kinds of negative emotions played a part in a decision to leave the work organisation:

I was forced to think about the kind of future I have in this organisation, and the kind of future I want to have for myself. I noticed that I had to move away, the changes in the management culture caused me to leave... I found the management culture to be all about control. I had the feeling that the most important task of the administration was to control what the staff were doing. I mean that there was no freedom for me, and that was a bad thing. I also felt that I was learning nothing here, and as for expertise in the areas I'm strongest in, the organisation didn't need it. It's really oppressive if you feel that the organisation doesn't value your competencies.

Here it should be noted that although emotions can be seen as an essential part of the agentic processes in career negotiations, the findings indicated that rational considerations (concerning the relationship between the professional self and the work organisation) were also in question.

The study by Vähäsantanen and Eteläpelto (2015) further revealed that the enactment of professional agency resulted in positive emotions, such as *satisfaction*, *enthusiasm*, and *happiness*. These emotions emerged when the educators found a new professional home after deciding to leave the previous work organisation. The new work environment gave possibilities for actualising professional ambitions and competencies. Overall, there are indications that professional agency and emotions can operate via a mutual interaction: emotions (especially negative ones) can impel individuals to enact professional agency regarding their careers. For its part, the enactment of agency produces positive emotions.

9.5.2.3 Negative Emotions Activating or Subduing Agentic Efforts Relative to the Work

The overall findings of meta-synthesis indicated that negative emotions, such as *exhaustion* and *dissatisfaction*, activated professional agency in terms of influencing one's work. For example, one educator sought to transform the content of her work, when the work did not correspond to her professional preferences and made her totally exhausted (Vähäsantanen and Eteläpelto 2011). However, when her agentic actions did not produce the desired outcome, she experienced confusion:

I was so tired in the spring and to crown it all there were these psychotic cases among the students. So I was just so tired that I was crying and telling the managers that I wanted to do something else than teaching duties, development work. I told them I could no longer take on the responsibility for these groups where there were such an enormous number of problems. And they didn't listen. I don't know what I should have done, but in my opinion there's definitely something wrong if a person comes to their manager in tears and they say they just can't go on, and nothing happens. So I don't know what I should have done. I suppose I should have taken a long spell of sick leave myself...

This example also shows how the educator had no true power regarding her work practices. The educator's agentic attempts did not result in any concrete changes in her work practices, because they were not truly recognised by the leaders.

In similar manner, the study by Ursin et al. (2017) illustrates the connection between negative emotions and agentic activities relative to educators' work, plus the meaningful contribution of other people for the enactment of agency. The study

gave an account of an educator who aimed to change his work tasks to correspond to his professional interests and goals; this was in a situation where he was *dissatisfied* with his current work. In the negotiations with the leaders, he was able to change the content of the work, and as a consequence, the work was now experienced as “dream work”. One reason for the successful outcome appeared to be that the educator proposed this change with his colleagues instead of aiming to enact professional agency alone.

However, our meta-synthesis also indicated how negative emotions (such as fear, anxiety, disappointment) do not always activate the educators towards professional agency, especially when particular kinds of management practices are dominant. Thus, in the study by Vähäsantanen and Eteläpelto (2015), the emotionally troubled situation (involving *anger* and *anxiety*) operating between the educators and the work organisation brought about a change in career for an individual, but did not result in any attempts by the educators to influence their unpleasant working conditions. One explanation for this kind of behaviour would be that the educators saw no real opportunities to exert influence within that particular managerial culture. Similarly, in the study by Vähäsantanen and Eteläpelto (2011), even though negative emotions (*disappointment* and *annoyance*) emerged as a result of the external changes, the educators reported that it was easier to be quiet and to try to do their tasks without active attempts to influence the working conditions, since nothing would be gained by so doing in the current organisational landscape.

There is evidence that *fear* can prevent the enactment of professional agency relative to the content of one’s work. Ursin et al. (2017) presented the case of an educator whose current work did not include research activities. He experienced this as disappointing, but he did not want to discuss it or negotiate with the leaders. This was due to previous unpleasant experiences, which had emerged during fairly similar negotiations. He had learnt that it was better to be quiet than to seek to transform one’s work practices. Overall, negative emotions appeared to create a situation in which the educators wished for changes in their work practices. However, the leadership culture was particularly important in educators’ efforts to change their work practices, bringing about either success or failure in these efforts.

9.5.3 *The Emotions Involved in Leaders’ Work*

As in the accounts of the educators, the accounts of the leaders reflected a wide variety of emotions (Table 9.3). The positive emotions were mainly connected to the possibility to work according to their core commitments, values, and ethical principles (i.e. professional identity) and to experience inspiring social relationships and good collaboration (Hökkä et al. 2013, 2014). The leaders considered the most rewarding situations to be those where they could utilise their expertise in collaborating with followers and in supporting their own work. However, the emotion of inadequacy was also common. This was mainly connected to situations where the leader was forced to go below his/her own professional standards. In addition, the hectic

Table 9.3 Overview of the emotions within leaders’ work

	Positive emotions	Negative emotions
Professional identity	<p><i>Joy and satisfaction</i> from autonomy, independence, and diversity in the work.</p> <p><i>Strength</i> from knowing oneself as a leader.</p> <p><i>Leniency</i> towards oneself.</p>	<p><i>Inadequacy</i> when unable to work according to one’s own commitments and ethical principles, and forced to go below one’s own professional standards.</p> <p><i>Distress</i> on being picked out for a trusted leadership position from among the personnel.</p>
Work	<p><i>Enjoyment</i> from the diversity of the work.</p> <p><i>Joy</i> (from the autonomy and independence of the work).</p>	<p><i>Frustration</i> and <i>exhaustion</i> from demands to raise productivity at a time of continuously decreasing resources.</p> <p><i>Inadequacy</i> from having no means of influencing the instructions coming from upper-level management.</p>
Social relationships	<p><i>Joy</i> from working collectively and making progress with the personnel.</p> <p><i>Confidence</i> and <i>strength</i> from collaboration and social sharing with colleagues and employees.</p> <p><i>Leniency</i>.</p>	<p><i>Inadequacy</i> and <i>distress</i>, due to the hectic nature of the daily work, which often includes misunderstandings and unintended friction.</p> <p><i>Fear</i> and <i>anxiety</i> from being “shut out” by the personnel or from being overloaded by the dissatisfactions expressed by personnel.</p>

nature of everyday work often caused misunderstandings and unintended frictions, leading to distress and a sense of inadequacy (Hökkä et al. 2014, 2017b). According to some of the leaders, the most distressing situations were those in which the employees loaded their own dissatisfactions onto the leaders. This gave rise to feelings of being used as a “spittoon” or “waste basket” for the work community. However, the most powerful source of negative emotions was the administrative responsibilities issued by upper management (Hökkä et al. 2014). The leaders indicated almost purely negative emotions connected to administrative responsibilities; they found it particularly exhausting to respond to multiple assessments and external evaluations, to compose administrative reports, and to manage within a situation of ever-decreasing resources. The emotion of inadequacy was the most prevalent emotion connected to the leaders’ identity, work, and social relationships.

9.5.4 The Relationship Between Emotions and Professional Agency Among Leaders

Below, we illustrate the relationships that were most apparent regarding the leaders’ enactment of professional agency and their emotions. The leaders’ enactment of agency (like that of the educators) seemed to be powerfully embedded with negative

emotions. The negative emotions appeared to operate as activators for developing collective leadership practices. They also seemed to strengthen weak individual agency, especially as regards implementing instructions from upper-level management. The emotion of inadequacy was evidenced strongly. One constructive way for the leaders to overcome the continuous emotion of inadequacy was to adopt the notion of leniency towards themselves and others.

9.5.4.1 Anxiety and Fear as Forces for Agentic Actions

The study by Hökkä et al. (2017b) was based on a group discussion conducted by a team of four leaders. The study indicated that *fear* exerts strong power in terms of pushing leaders towards agentic actions. It also revealed a transformative pathway in which a separate and individual leadership model had moved towards one of collective leadership. The four leaders in question had been nominated as new leaders of the university department. The posts they took up were those of leader of the department, deputy, pedagogical leader, and research leader. The study indicated that the previous leading culture and practices had been based on individual leading and on fairly strictly defined duties and responsibilities. The new team indicated that in the reformed work situation this kind of individual leadership was stressful and exhausting. They also evidenced a sense of weak agency, especially in formal leading practices such as conducting departmental meetings. The following extract illustrates how the leaders talked about the *distress* experienced in these meetings:

Leader A: It was somehow distressing, that you had to take part, and you couldn't really refuse, and then some matter came up, something you couldn't put a stop to.

Leader D: mmm.

Leader B: These were really frightening mornings, when you had to chair these meetings.

Leader C: Yes, I'd agree with that.

Leader B: It was horribly difficult somehow... it was more or less a question of just surviving.

Leader A: Yes, you got the blame for everything.

A sense of *fear* and *anxiety* from working alone had led the leaders to seek to move from an individual "leadership burden" towards collective practices. The leaders had put a lot of effort into getting to know each other, both informally and professionally. Through deliberate team building, meetings, and negotiation, they were able to build trust and a supportive atmosphere in their own group. In so doing, they were able to construct a new kind of team-based and collective leadership model for their organisation. This way of leading had offered a kind of safety net for everyday leadership practices and for the processing of emotional issues. It also gave a sense of safety in addressing difficult issues, including critical voices, and tense relationships. The leaders indicated that the group had offered strength and protection and had reduced the fear of being "shot down" by the staff, for example, in departmental meetings. The emotions and the sense of agency connected to them were expressed in the following terms:

Leader D: In terms of agency it is kind of concrete, I mean the emotion is totally different, and you can somehow behave through common sense [others nod assent], and if you yourself freeze up you can trust that some other person will take the lead and continue. And also the kind of going over things afterwards ... I mean wallowing in emotions doesn't happen anymore [others nod assent], so you can respond neutrally. Those feelings, you can kind of immediately ... [makes gesture of sweeping away with the hand], so that those powerful tensions do not arise. We have deliberately agreed that ... right? That [others: yes, yes, nodding assent] we'll support each other.

Collective agency had empowered the leaders to address problems and tense situations (such as criticism of the leaders themselves, tensions between employees, and negative feedback from students) and to do so in an active manner. Thus, the study by Hökkä et al. (2017b) implies that emotions that appear to be highly negative, such as *fear* and *anxiety*, can function as stepping stones towards highly positive actions, including transforming leadership practices in a constructive manner. Furthermore, when the transformations are successful (involving, as in the present case, a change from individual to collective leadership practices), the result may be one of enhanced positive emotions, such as *confidence* and *strength*.

9.5.4.2 Emotions in Negotiating a Balanced Professional Leader Identity

Among the leaders, emotions proved to be important “amplifiers” within professional identity negotiations. This was connected both to personal identity (i.e. *who I am as a leader*) and to collective identity (i.e. *who we are as a group of leaders*). Emotions of *strength*, *confidence*, and *joy* appeared to be as pivotal when the leaders processed themselves as leaders. The studies by Hökkä et al. (2014, 2017b) demonstrated the importance of leaders’ agency in individual identity negotiation. If the leader was able to use his/her expertise, and to act according to personal ethical standards, positive emotions such as *joy* arose. In these studies, the middle-management leaders concerned indicated that leading is a tough job: it cannot be implemented through externally set roles, and it requires much identity work and negotiation. One leader described her crystallised understanding of her professional identity and agency and the strength it gave to her:

In managerial work, knowing people and accepting difference is an important part of leading. You have to know yourself as a leader, and also accept yourself, and find your own way of leading through your personality. This leads on to accepting differences in co-workers and subordinates, too.

In Hökkä et al. (2017b), the importance of *strength* and *confidence* within leaders’ collective identity negotiations emerged strongly. The study indicated that in current turbulent times, leading is such a demanding task that one cannot survive as a leader on one’s own. Building a collective leader identity – a sense of “us as a leader team” – demanded *strength*, *courage*, and *confidence*. This was needed if they were to make visible their own personal strengths – and especially their weaknesses. A strong collective leadership identity did not mean that the leaders built barriers around themselves. On the contrary, they became empowered to

encounter themselves and to interact with the whole work community in a constructive “bridge-building” manner.

The findings of Hökkä et al. (2017b) emphasised that professional identity, emotions, and agency are interrelated, insofar as a strengthened collective identity supported agentic actions, and these in turn had consequences for the emotions arising within work practices. Positive emotions of *strength* and *confidence* supported leaders in taking new actions and in creating new practices to address difficult situations. Thus, the leader group noticed that they needed external support for their leading. To address this, they had hired an external coach for group counselling. They indicated that this had helped them, collectively, to become aware of their own defensive actions and to gain constructive strength for their leading. From this, new kinds of leadership practices had emerged. Leadership was now based more on encountering, interacting, and conversing – or as the leaders put it *being present with and giving attention to people*:

Leader C: But I didn’t have the feeling that when someone came along to complain, [I would tell them] “say what you have to say or shut up”.

Leader A: No, not at all, but [rather] a reaction of “OK, here we are”. That we truly want to hear what you have to say. But it helped me at least, the fact that we had chatted about that in the work guidance sessions, so that the worst of that defensiveness had cleared away, so that one didn’t have to go into these situations with that kind of feeling of “eek”.

The strength of the leaders’ collective identity, and the sense of themselves as a group, had offered the kind of support that enabled them to deliberately discuss difficult issues, including deeply unpleasant matters such as tense relationships and critical feedback from students.

9.5.4.3 Strengthening Agency: From Inadequacy Towards Leniency

The study by Hökkä et al. (2014) showed that one strongly dominant emotion in the leaders’ work was *inadequacy*. Inadequacy was connected to the leaders’ sense of professional identity and their social relationships with the personnel and to their work, with its administrative responsibilities. Inadequacy was experienced particularly in situations where the leaders could not act according to their own ethical principles or the standards they had set for their work. These situations were also often described as consequences of the excessively heavy workload imposed by upper-level management. Thus, inadequacy was often explained as resulting from situations in which the leader had little or no agency. One leader described the overwhelming sense of inadequacy in her work as follows:

A sense of inadequacy, a continuous feeling of inadequacy, that one would like to do things so very much better, but it’s just that one doesn’t have time, doesn’t have the energy, just can’t...

The study by Hökkä et al. (2014) further showed that through identity work, leaders were able to construct a more relaxed relationship with themselves and their work, by adopting the idea of *leniency* towards themselves. By reflecting on their

own emotions with greater leniency to themselves, and by having inner conversations with themselves in tensioned situations, they seemed to gain a stronger sense of agency. Leniency was connected to accepting their own imperfections and perceiving ways of acting accordingly. This acceptance of imperfections was related to the broader issue of understanding oneself as a totality, with one's own overall strengths and weaknesses. Leniency also strengthened the leaders in setting limits to themselves, to the work, and to the demands set by others (i.e. upper management).

9.6 Discussion and Conclusions

In this meta-synthesis, we have elaborated the connection between emotions and professional agency at work. We were interested in employees' and leaders' accounts concerning their work, emotions, and agency and in the similarities and differences in their accounts. The number of the primary studies is relatively small (5), and it is limited to our own empirical studies. The reason for this is the lack of other empirical research on the connection between professional agency and emotions at work. Regardless of this, we were able to elaborate the relationship between emotions and enactment of agency at work and to stress some differences and similarities in the employees' and leaders' accounts.

The findings of this meta-synthesis showed that among both employees and leaders, the accounts of the work reflected a wide variety of similar emotions. It also appears that emotions have both a transformative and a sustaining power in the enactment of agency related to professional identity. Positive emotions such as joy and satisfaction proved to be important in shaping professional identities when the work was undergoing changes. By contrast, negative emotions seemed to feed maintenance-oriented behaviour in professional identity negotiations. Moreover, emotions play a significant role in the actual *enactment* of agency at work. Negative emotions (e.g. dissatisfaction, distress, and anxiety) in particular seemed to be powerful forces for transformative actions, in terms of making a change in one's career or influencing work and organisational practices.

The findings support the reciprocal relationship between emotions and agency at work. Negative emotions seemed to trigger the enactment of professional agency regarding one's professional career and work practices, while positive emotions activated agency in terms of renegotiating professional identities. On a reciprocal basis, the enactment of agency seemed to foster positive emotions. When a person can agentially affect the work and renegotiate his/her professional identity and career, positive emotions, such as joy and satisfaction, emerge. Weak agency, for its part, seems to arouse negative emotions, such as inadequacy and distress.

The findings showed that negative emotions are likely to be powerful energisers for both employees and leaders, in taking agentic actions. The findings also support previous studies concerning negative emotions, indicating that they can act as forces for change in organisational settings (e.g. Barsade and Gibson 2007; Van

Kleef et al. 2009). In our study, the emotion of *fear* emerged as one negative emotion shared by both employees and leaders. Fear was shown in situations connected to social relationships, people, and interactions. However, the relationship between agency and fear varied between the leaders' and the employees' accounts. Our study implies that fear is likely to paralyse employees, for example, in situations where active agency would be important (e.g. in developing one's own work). By contrast, fear seems to activate leaders, so that they endeavour to influence and/or develop organisational practices. Thus, it seems that when considering issues of emotions and agency at work, one must also look at issues of power and the particular power relations in a given situation.

The relationship between power and agency at work has been acknowledged in several studies (e.g. Clegg et al. 2006; Collinson 2000). Through different forms of power (e.g. discursive power, legitimate power, socio-emotional power), individuals or collectives are able to strengthen their professional agency within the social structures and orders of the work organisation (e.g. Collin et al. 2011; Hökkä et al. 2017a; Paloniemi and Collin 2012). At the same time, strong agency is a means of gaining power in an organisation. Thus the relationship between power and professional agency is a dual one. It can be claimed that power does not depend only on the structural position but also on the agency operating in a particular situation. Vince (2001) has discussed the intertwining role of emotions and power in work organisations, underlining especially the role of anxiety in managerial work. He argues that interaction and social relations – considered as landscapes for professional agency – are influenced by both individual and collective emotions, which are not free from power relations. Our study, too, provides evidence regarding the reciprocal relations between emotions and professional agency at work, and it similarly underlines the importance of power relations in work contexts.

In our view, future studies should look more closely at the connection between emotions and *learning* at work. Some recent studies have in part addressed the role of emotions in learning and development in organisational contexts (Benozzo and Colley 2012). Some of our findings, too, suggest that emotions play an important part in professional learning and development. This applies particularly to the kinds of learning and development that are bound up with professional identity negotiations. All in all, our view would be that future investigations should focus more on how emotions are related to learning (as antecedents and consequences of the learning process), how emotions are related to the learning process (as constrainers and enablers), and how practices and methods can utilise emotions as a learning resource.

We would also suggest that in the future, the emotions enacted by top-level management should be addressed. The present study involved the relationship between emotions and agency in the work of employees and middle-management leaders, for whom emotions play an important role within everyday encounters, interactions, and practices. However, it is certainly the case that emotions play an equally crucial role in top-level and/or strategic-level decisions and in overall policymaking. Thus, in future studies, one would hope to address the ways in which emotions operate among those who hold the levers of power in an organisation.

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Chapter 10

Emerging Conceptualisations on Professional Agency and Learning

Anneli Eteläpelto

10.1 Introduction

10.1.1 Variations in Ways of Understanding Agency

The first section of this edited collection has presented widely differing conceptualisations of *professional agency*. In a variety of ways, the chapters contribute to discussions on professional agency and on agentic perspectives concerning professional learning. In doing so, they provide novel accounts of work-related learning and development. In addition, the chapters offer analytical lenses, usable in future research. The conceptualisations presented also provide theoretical frameworks and analytical tools that can be applied in supporting the career constructions of individuals, amid the changing demands of working life.

An understanding of agentic perspectives is always imbued by *societal contexts*, comprising economic, material, and cultural circumstances. The reader will note the wide variation in local circumstances and in the situations of the work organisations in the studies reported. The authors in the first eight chapters come from Australia, Germany, Finland, the UK, and the USA. Although these all represent developed Western countries with many similarities in their sociocultural and working-life conditions, there are also significant differences in their leadership practices, their interaction cultures, and the discourses used to characterise ideal practices for developing working life. In addition, linguistic challenges emerge relating to the local policy discourses used in promoting work-related learning and the development of working life. For example, in German, it is difficult to find a word with a

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similar meaning to the English word *agency*. Instead – as the chapters of our German authors demonstrate – efforts to develop production and to promote work-related learning are conceptualised in terms of *innovative work behaviour* and *intrapreneurship* (see Sect. 10.2.3). In fact, the phenomena presented mirror fairly closely what is understood by “agency” and by agentic perspectives on work-related learning and development. Nevertheless, one can see here how differences in cultural discourses have the potential to influence how we understand agentic perspectives at work.

Despite exhibiting a range of conceptualisations and theoretical lenses, the approaches have more similarities than differences. The similarities concern an understanding of agency as a phenomenon implying active human participation. This encompasses influencing, transforming, developing, and initiating new ideas or taking a critical stance towards existing practices at work. However, agency can also be seen as involving primarily *capacities* and *potentials* and the power to engage in the various activities mentioned above.

Rather than implying a need to find a single way of understanding agency, the differing conceptualisations can be seen as a richness. They provide a good foundation for a deeper understanding of the phenomenon. In fact, the perspectives of the authors can be seen as complementary rather than conflicting, with possibilities to enrich theoretical discussions. This emerges in the manner in which the *surrounding context* seems to lead to different understandings of the role of agency in work-related learning. The studies reported indicate how different kinds of social, material, and economic circumstances can resource and/or constrain agency within different societal and working-life conditions. The resources and constraints can involve, for example, different kinds of employment relations (permanent or full-time work vs. contract-based project work), differences in the role of technology and in the tools for working, forms of work practices, leadership styles, and other organisational circumstances.

In addition, the previous chapters demonstrate the range of occupational domains within which conceptions of agency have been developed. Professional work provides the setting for vocational and adult education teachers, nurses, wholesale employees, and freelancers in the film and media industry. Such a spectrum of domains and employment relations facilitates nuanced views when one is seeking to further analyse agency and agentic perspectives on work-related learning.

This chapter seeks to provide an evaluative summary of the major contributions from the first section of this book. The first section (i.e. the first eight chapters of this book) conceptualises agency via different theoretical approaches. Hence, a comparison of the agentic perspectives needs to focus on the differences and similarities and also on the different strengths of the approaches and conceptualisations touched on. Here it may be helpful to scrutinise the chapters from four different angles.

10.1.2 *An Overview of the Perspectives Applied in the Previous Chapters*

First of all, one can focus on how the *core meanings* of agency and the agentic perspective are understood. The main differences lie in whether agency is seen as a *behavioural process* or else as a more permanent individual or collective *characteristic*, leading to certain kinds of behaviour. In addition, within each of these options, differences can be identified. Thus, there are differences in what are seen as core aspects of individual behaviour (involving notably situational cognitive, motivational, and affective processes) and differences also in relation to long-term career-construction processes. In parallel with these, on the level of individual/collective traits, differences emerge in the extent to which relational, collective, and social aspects of agency are deemed to be salient.

Secondly, approaches differ in how they consider the *contextual aspects* of working life to relate to agency. Here, there are two extremes, comprising, on the one hand, a view of the societal levels and historical configurations of working lives as fundamental determinants of agency and, on the other hand, a view of people as separate individuals, each with an individually constructed capacity and situationally emerging potential to practise agency. These different perspectives have different practical consequences concerning how agentic perspectives could contribute to work-related learning and development. If agency is understood as a (individual) permanent and stable characteristic, one might pay less attention to developing working-life conditions, preferring rather to develop more refined assessment tools and measurement instruments. These would make it possible to select employees with the degree of agency required in a given type of employment. One can argue that such an exclusive application of agency would neglect the need to enhance work practices and would be harmful in the long run. By contrast, a more elaborated understanding of agency – as something practised within and through specific working-life conditions, and including affordances for as well as obstacles to the promotion of agency – can be seen as more fruitful for developing working life and for encouraging the innovations demanded in a competitive global economy.

Thirdly, the present chapter addresses the practical conclusions implied by different understandings of agency. This includes asking how the different understandings relate to *work-related learning* and the development of work practices. In this connection, we need to discuss the conceptions of work-related learning that may be involved in the different understandings of agency and, overall, how agency is seen as related to learning. In some cases, the practice of agency is seen as mediating or enabling work-related learning. In other cases, it is viewed as almost identical to learning. In all cases, we are dealing with an agentic perspective on work-related learning. This would imply that our conception of learning at work has evolved in such a manner as to view *all meaningful learning in the work context as agentic*.¹

¹The idea of agentic learning has recently moved to the school level, with learners being seen as active agents. Since 2016, following reforms of the national curriculums in Finland, learning at all levels of schooling (from preschool to adult education) has been defined as agentic learning.

It is true that a view of agentic practice as identical to work-related learning would be problematic in terms of making an analytical distinction between the two concepts. However, it seems reasonable to assume that there is at least an overlap between the concepts of agency and work-related learning, notably as regards the *transformative* aspects of agency. This is particularly the case if we adopt an activity-/practice-based understanding of professional learning.

Fourthly, this chapter discusses what the different conceptualisations of agency imply for future research and for development towards agentic work practices. This is important, since one can assume that different conceptualisations of agency will provide different kinds of analytical lenses for empirical research, touching on the operationalisation, measurement, and development of agency at work and the promotion of lifelong career construction. On the basis of the author's evaluative summary, this chapter will also seek to identify the most important gaps in our knowledge, requiring research on agency in work-related learning and on individual lifelong career construction.

In this chapter, the author's own understanding and analytical lenses could well influence the evaluation. It thus seems fair to make these lenses explicit. For this purpose, the *subject-centred sociocultural* (SCSC) approach to professional agency is briefly described below.

10.1.3 The Subject-Centred Sociocultural (SCSC) Perspective as a Lens on Agency

The SCSC perspective has made use of social science and post-structural notions of agency. It encompasses subject-centred sociocultural notions of work-related learning and includes also life-course and identity approaches to agency (Eteläpelto et al. 2013). On the basis of these notions, agency is understood as a practice-based process of action and behaviour which individuals or collectives enact through influencing, making choices, and taking stances in their work and/or their professional identities. Professional agency is seen as enacted in and through the material and sociocultural conditions of work. Professional identity, for its part, refers to the subject's professional sense of the self, as a personal and social entity. Professional identity thus encompasses the subject's personal interests, goals, and ethical commitments at work (Eteläpelto et al. 2014) (see Fig. 10.1.). In their empirical research on agency at work (which takes the SCSC approach as a starting point), the researchers have conducted several qualitative studies on agency, concerning how it is enacted, resourced, and constrained, for example, in the fields of education, health care, and the IT industry (Eteläpelto et al. 2015; Hökkä et al. 2017a; Vähäsantanen et al. 2016a, b). The understanding of agency within the approach applied has been further enriched by intervention studies, which have operated at individual, collective, and organisation levels in a complementary manner (Vähäsantanen et al. 2016a, b; Collin et al. 2015).

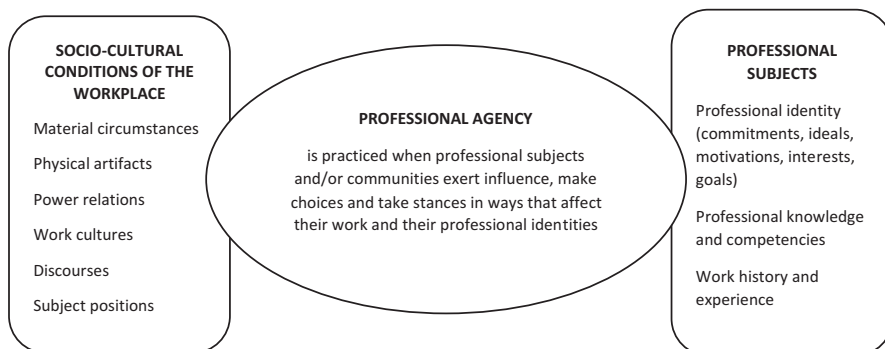


Fig. 10.1 Understanding of professional agency within a subject-centred sociocultural framework (Reprinted and adapted from Eteläpelto et al. (2014, p. 659) with permission from Springer)

One recent endeavour within the SCSC approach has been aimed at developing a quantitative instrument for measuring agency in work organisations. Based on a comprehensive survey on agency in different work contexts, the research group has conducted statistical validation of a multidimensional model comprising three major components of professional agency. These have been identified as (a) *influencing at work*, (b) *contributing to work practices*, and (c) *the negotiation of professional identity* (Vähäsantanen et al. 2016a, b). These components have enriched the current understanding of professional agency within the approach adopted, which takes as a starting point the affordances and constraints operating in the work context, including official and unofficial facets of power. The aim has been to understand the role of agency in promoting individual employees' long-term career construction, including their possibilities for negotiating their professional identities. Overall, this endeavour seeks to contribute to sustainable learning and well-being at work.

In accordance with policy-level discussion (in Finland), it can be anticipated that the usefulness of the agency perspective will derive from its double function. Thus, agency can contribute (a) to development and innovativeness in creating goods and services and (b) to the well-being, career construction, and continuous learning of employees. In the following paragraphs, this is taken as a basis for discussing the various theoretical perspectives presented in the previous chapters. Roughly speaking (as analysed via the SCSC approach), the chapters in question conceptualise active agency from three major perspectives. These encompass (a) influencing and participating in one's work, within and through social, material, and power-related conditions; (b) transformative, developmental, and innovative work behaviour; and (c) the negotiation of professional identity, viewed as encompassing values, interests, goals, competences, and career construction over the long term (Vähäsantanen et al. 2016a, b).

Below, I will evaluate how different conceptualisations depict (a) the core processes of agency, (b) sociocultural conditions, and (c) professional subjects.

10.2 Core Interpretations of Agency

10.2.1 Agency Understood as Transformative Behaviour

In viewing agency as a behavioural or activity process, agency is not understood purely as a matter of maintaining and reproducing behaviour. Rather, it is active behaviour, with *transformative* influences. Thus, agency is a matter of making changes to a previous or present state of affairs. The transformative emphasis is to some degree present in the understandings of agency presented in all the previous chapters (see Evans 2017; Goller and Harteis 2017; Hökkä et al. 2017b; Hopwood 2017; Kwon 2017; Messmann and Mulder 2017; Smith 2017; Wiethe-Körprich et al. 2017, all in this volume). If agency is seen from a subjective life-course perspective (Evans 2017; Hökkä et al. 2017b; Kwon 2017; Smith 2017), active influence is directed at the person's life and future life course. This may include decisions concerning the individual's current work situation during the renegotiation of professional identity. However, these active processes of enacting life-course agency have a long-term influence on the direction of one's life, even beyond one's career and work situation. In the case of Kwon, this is manifested in the subject's active and sustainable (but challenging) formation of a career continuum and its future-oriented perspective. In the chapter by Hökkä et al. (2017b), transformative agentic actions within a life course are manifested when employees resign from their work to become independent entrepreneurs or when vocational teachers renegotiate their professional identities as a consequence of a curriculum reform. Generally speaking – from a life-course perspective – transformative agency tends to manifest itself as making active choices and decisions concerning one's individual career construction. In previous literature, such agency has been termed *life-course agency* (e.g. Hitlin and Elder 2007; Hitlin and Kwon 2016).

A similar future orientation is present in understandings of agentic behaviour as transformative in terms of developing something new within work practices, products, tools, and conditions at work. In these understandings, agency is seen as a transformative and generative process of innovative work behaviour (Messmann and Mulder 2017, this volume) or as intrapreneurship (IP) behaviour (see Sect. 10.2.3) involving the generation, planning, and implementation of innovative projects within organisational practices (Wiethe-Körprich et al. 2017, this volume). Agentic processes are thus seen as the proactive construction of plans or as the recognition of opportunities for new initiatives, plus their implementation (Goller and Harteis 2017, this volume). Here, one can recognise a transformative influence on work practices or products. Active behaviour may include, for example, recognising and suggesting innovations aimed at new and competitive products and at reforming processes within the work.

Looked at in detail, agentic actions can be viewed as *cognitive* and *rational*. However, they can also include *motivational* and *volitional* facets, such as the application of “grit”, introduced by Kwon. In the chapters of Wiethe-Korprich et al. and of Messmann and Mulder, agentic actions are understood primarily as creative and generative processes, leading to innovation in development. By contrast, emotional processes have received relatively little attention in connection with agentic processes. Although Evans briefly refers to feelings in connection with individual behaviour (in referring to thinking, feeling, and acting), the chapter by Hökkä et al. is the only one which thoroughly moves the discussion in this direction. Thus, it discusses the crucial role of emotions and how they are related to employees’ and leaders’ decision-making concerning their agency at work and their career construction. In addition, emotions are addressed by Hökkä et al. in relation to the pressure on employees and leaders (at middle and upper level) to renegotiate their professional identities. It can be expected that in the future, there will be a stronger focus on the emotional aspects in agentic processes and in the enactment of professional agency.

10.2.2 Agency as Relational Action

Work behaviour and work-related learning are usually seen as social processes. Traditionally they take place in work organisations, but increasingly also in private and, for example, virtual contexts. It is understandable that the social nature of work behaviour is to some extent present (and is at least not denied) in the conceptualisations of agency presented in this book. However, in some of the definitions, the practice of agency is seen primarily (i.e. at its core) as a *relational* phenomenon.

Referring to Edwards’s (2005) concept of *relational agency*, Hopwood does not view agency as a personal property or characteristic. Rather he sees it as arising through the dialectic between person and practice (and also as connected to the capacity to influence conditions that affect development). Agency is seen by Hopwood as required especially in non-routine situations, referred to as epistemic dilemmas. Such dilemmas demand fresh knowledge, and they also produce new knowledge. In such an understanding, agency is seen as identical with the learning that occurs in work practices, when a person solves problems arising from work tasks. The practice of agency is examined by Hopwood via a cultural-historical approach; this reflects Vygotskian (Vygotskij et al. 1994) roots and Leontjev’s (1978) work on motives (Hopwood 2017, this volume), but does not follow the systemic approach associated with cultural-historical activity theory (CHAT), as presented by Engeström and others. Hopwood follows Edwards’s notion of relational agency and Knorr Cetina’s (2001) notion of epistemic objects. Agency is seen both as an activity and as learning, but as involving also an individual capacity for recognising and solving epistemic dilemmas. These are characterised by partial and incomplete knowledge, by the fragility of what is known and by the unstable nature

of the knowledge in question. Agency is analysed in terms of professionals' capacity to recognise and respond to such dilemmas, in the context of family services. This kind of knowledge work is seen as relational and emergent and thus as demanding agentic capacity and practice from professionals. Although Hopwood partly sees agency as a capacity, he concludes with the opinion that agency is not a matter of individual possession; rather, the exercise of agency is something arising from the dialectics between the person and the practice, the individual and the collective, and the professional and the client.

This is close to Smith's understanding of the relationships between agency and work-related learning. In discussing personal agency, Smith is concerned with the set of influences that can be attributed to individuals when they contribute to socio-cultural activities and practices. His somewhat complex definition of agency implies that agency is intertwined with and partly identical with the processes of learning in, through, and for work. Workers are seen as active learners who are engaged in learning through the practices that constitute the work, and for Smith, learning activities can be conceptualised as *epistemological agency*. This view is based on three aspects of agency: (a) agency as a property, (b) agency as a relationship, and (c) agency as transformation. Smith sees agency as a mediating concept in the work-learning relationship, and he emphasises the socio-personal practice of work-related learning. To illustrate such personal agency at work, he gives an account of an emotionally charged situation in which a boss shouts aggressively at a new employee. The employee is seen as practising agency by taking a passive stance, accompanied by apparent embarrassment. Such a passive stance, although here viewed as highly agentic as a means of coping with the situation, would not always be understood as typical agentic behaviour. However, Smith argues that from the perspective of the employee, such behaviour leads to meaningful maintenance in terms of the outcome. This demonstrates how agency is manifested as a social practice; the purpose of agentic actions is negotiated in the social interaction and in the broader context. It is these that make agentic practices meaningful and consequential.

The view of agency as transformational in relation to a previous state is similar to other understandings of agency. However, differences exist regarding the object of transformation. Agency can be conceptualised as relationship-in-action. Based on Billett's (2008) suggestion concerning the relational interdependence between personal agency and the social affordances of the workplace, Smith sees learning as personal development and as altered practices emerging from the relationship between the individual and the social domain. In the work context, this is manifested, for example, as friendliness between co-workers – friendliness which is open and which both gives and accepts support in emotionally challenging situations. Work-related learning is conceptualised by Smith as epistemological agency, which is defined as the individual's purposeful generation of the occupational knowledge, skills, and practices comprising work. Agency is to be considered developmentally, exerted across a life of engagement in social practice.

10.2.3 *Agency as an Innovative and Creative Process*

Modern business life calls for innovative thinking. Hence, agency in working life is increasingly understood as requiring an entrepreneurial orientation and entrepreneurial skills, including also competence in *intrapreneurship*. This is addressed in the present book by Wiethe-Korprich et al. In their view, an important twenty-first-century skill can be identified in employees' own entrepreneurial ways of thinking and acting within an organisation. On the basis of a literature review, the authors developed a model encompassing the components of intrapreneurship (IP) behaviour, which are said to comprise, primarily, identifying and implementing opportunities for innovation. The authors start with Pinchot's (1985) definition of IP, as something that originates from an individual who acts like an entrepreneur while having the role of an employee. Nevertheless, they consider it more fruitful to view IP as a process, rather than as an individual disposition. Hence, it constitutes one of the processes by which new ventures, products, services technologies, administrative techniques, strategies, and competitive projects are developed and implemented within organisations.

The authors make it clear that IP is not a stable characteristic, but rather a malleable facet of human behaviour, and that it can change in response to educational interventions. Such malleability is seen as bound up with cognitive, motivational, ethical, volitional, and social aspects of behaviour. Having conducted a literature search, the authors identified 78 relevant articles. From an analysis of the IP-related dispositions exhibited, they formed three main categories, namely, (a) knowledge, (b) skills, and (c) attitudes. These were seen as comprising social competences (such as assertiveness), team and leadership competences, resilience, emotional intelligence, proactiveness, goal-achieving behaviour, and autonomous activity. The model developed so far appears to have considerable potential in covering the kinds of knowledge and skills related to the development and implementation of new ideas. The authors have arrived at a comprehensive, fine-grained, and action-based IP competence model. The constructs identified overlap in most respects with what is termed more generally *work agency* (see also Goller and Harteis 2017, this volume).

Messmann and Mulder (2017, this volume) similarly conceptualise work agency as innovative behaviour and see innovation development as an employee-driven process. Messmann and Mulder identify four dimensions of innovative work behaviour; these are (a) opportunity exploration, (b) idea generation, (c) idea promotion, and (d) idea realisation. They emphasise that this is not to be viewed as a sequence and that the dimensions are interdependent. They further elaborate the process of *reflection*, which they see as a necessary prerequisite for innovative behaviour in the workplace.

10.3 How the Individual Subject is Understood

10.3.1 *Individuals in Relation to Agency*

The conceptualisations of agency in this book exhibit significant differences in how they thematise (or do not thematise) individual subjects. Differences concerning the nature and role of individual subjects seem further to emerge from the varying ontological understandings of agency. These relate to whether agency is seen as a behavioural process *or* as an individual capacity to act *or* as a set of individual characteristics (see also Harteis and Goller 2014). Note that none of the conceptualisations in this book view agency purely as a set of stable characteristics belonging to an individual. Rather, agency is seen as (a) a capacity and/or (b) a behavioural process, influenced by the social context of the work.

Goller and Harteis (2017, this volume), who address agency from an individual employee perspective, propose as distinct components of agency (a) agency competence, (b) agency beliefs, and (c) agency personality. In modelling agency, they utilise literature on socio-cognitive psychology, life-course research, and organisational behaviour. They see as crucial self-efficacy beliefs, and especially individual dispositions, by which people aim to take control over themselves and their environments; these are viewed as comprising individual agentic capacity. They consider three aspects of human agency, namely, competences, beliefs, and personality, as having predictive value in the practice of agency. Goller and Harteis suggest that individual beliefs and competences relating to agency can be enhanced through appropriate training. By contrast, they understand agency personality as something more stable. In their theoretical starting points, they refer to individual developmental affordances which can influence the development of an agentic personality. However, further discussion will be needed regarding individual ontogeny factors (such as dispositions of temperament and their malleability) before it may be possible to generalise from preliminary findings on the role of stable personality traits or to consider their importance for agentic behaviour in the varying sociocultural conditions of working life.

For Goller and Harteis (2017, this volume), the actual practice of agency consists in making intentional choices, initiating actions, and exercising control over one's work environment and/or individual life. Goller and Harteis thus arrive at a compromise, understanding agency as existing both in individuals' capacities and in their actual behaviour. They see individual capacities as fairly stable, but as nevertheless influenced by workplace circumstances. In their empirical modelling of individual agentic behaviour, Goller and Harteis aim to explain both formal and informal workplace learning activities. However, in their view, future research will be needed to show how these individual components of agency interact with the work domain and with contextual constraints, such as the power relations emerging from different leadership practices. So far, Goller and Harteis have utilised empirical data from geriatric nursing in creating their model.

In conceptualising agency at the individual level, differences further emerge in whether the individual is viewed in terms of a recent or current situation or from a lifelong perspective. Other differences emerge also, ranging from a focus on ability and competence (Goller and Harteis 2017, this volume) to a focus primarily on professional identity (Hökkä et al. 2017b, this volume). The latter notion includes ethical commitments, interests, and ideals at work. It is possible to view the crafting and negotiation of professional identities (in terms of these commitments, interests, and ideals) as comprising, *per se*, the enactment of agency. Seen in this light, the primary object of agency enactment is not simply the work practice, but the subject's work identity.

In defining agency, the previous chapters do not focus on the individual purely from a chronologically narrow perspective. In fact, more attention is given to individuals from a lifelong (and life-wide) point of view. Such a perspective on agency is present within developmental sociocultural approaches (e.g. Billett 2008; Hitlin and Elder 2007) and in certain life-course approaches (Evans 2017, this volume; see also Eteläpelto et al. 2013). The studies in question present evidence concerning the role of life-course agency and its manifestation in critical decisions. These can involve, for example, career decisions and the construction of work identities within different societal circumstances (Biesta and Tedder 2007). However, Evans warns against viewing individual adults as self-contained, volitional beings engaged in individual projects. Instead, in accordance with her concept of bounded agency, individuals should be viewed in a manner that brings into focus the social, cultural, and relational dynamics of the person who is acting.

It is clearly important to determine how social circumstances influence individual employees' practice of agency and how they practise agency through the circumstances in which they are placed. So far, we know that degrees of autonomy, and the possibilities to exert influence at work, are closely related to the nature of the agency practised in the work. For example, in Finland, where teachers have had considerable autonomy in their work, this has provided them with wide opportunities to practise professional agency. This implies that teachers' individual orientations, interests, goals, and pedagogical commitments – comprising their professional identities – can have a huge influence on how they organise their work at the classroom level (Eteläpelto et al. 2015; Pappa et al. 2017). Opportunities to influence and implement independent decisions – hence to practise agency – give more space for individual subjects to operate, as compared to a highly regulated work environment. Importantly, since one's individual work identity has a huge influence on one's work, it also influences work-related learning.

In the light of the considerations above, it appears important not to neglect individual subjects, including their work identities, when we address how agency is practised at work. Indeed, there is evidence of close reciprocal relationships between professional identity and the practice of agency (Buchanan 2015). This is in fact why we assume, within our SCSC approach, that the practice of professional agency is closely intertwined with professional subjects' work-related identities, which are seen as consisting in their professional and ethical commitments, ideals, motivations, interests, and goals. Furthermore, we see it as highly likely that professional

subjects' unique work experiences, knowledge, and competences function as individual developmental affordances for the practice of professional agency. These are especially influential in the practice of what we refer to as *identity agency*, or when agency is understood as *career construction*.

10.3.2 Agency as Individual Career Construction and Identity Negotiation

Starting from a sociological framework, Kwon (2017, this volume) suggests that we should widen previous notions of agency towards a more elaborated understanding of how agency is practised. This applies particularly to the construction of an educational and/or work career in a foreign context (see also Sect. 10.2.1). Kwon refers to sociological discussion concerning the dialectics between social conditions and individual freedom. These are bound up with the notion that individuals do not have complete freedom and that a balance needs to be found between normative patterns of society and individual volition. Kwon criticises previous discussions of agency, insofar as these have been limited to viewing agency purely in terms of individuals' subjective beliefs (involving a sense of control coupled with certain future-oriented expectations). This would seem to refer to the socio-cognitive concept of self-efficacy, which is strongly present in the psychology tradition. As an alternative, Kwon proposes the psychosociological concept of *grit*, which represents behavioural or action-oriented aspects of agency. Kwon's proposal involves a movement away from cognition towards action and towards the exercise of power.

Kwon (2017, this volume) refers to studies showing how beliefs in better life outcomes (e.g. in terms of career expectations) are associated with socioeconomic determinants, such as age, gender, race, education, and income. Studies have indicated that people with a higher sense of agency (understood as a subjective sense of control and achievement) are more likely to achieve better educational and occupational attainments. Kwon notes that in a sociological discussion of agency, Emirbayer and Mische (1998) suggested bringing temporality back into the concept of agency. Kwon emphasises the importance of temporality in terms of a person's orientation to the future. She notes that optimistic life expectations among adolescents are indeed strongly predictive of later life outcomes. However, as she suggests, the link between beliefs and actions is lacking; thus the concept of *grit* is proposed, as a factor which bridges the gap. Grit is understood as a disposition to pursue one's interests over the course of years. According to Kwon, it is a recently developed concept predicting outstanding achievement. Grit is seen as a non-cognitive skill involving passion and perseverance, aimed at a long-term goal. Considered in more detail, grit is composed of two components, namely, consistency of interest and perseverance of effort. Kwon suggests adding grit as a behavioural component of agency. Grit in this sense would encompass behavioural tendencies manifested as working hard and, persistently, in line with one's future-directed orientation. However, as Kwon notes, future research will be needed on the background of grit and how it can emerge.

Writing within a sociological framework, Evans (2017, this volume) suggests a rethink of the role of personal agency and its limits. For her, agency is a bounded, lifelong process that is both biographically produced and socially embedded. The concept of bounded agency emerged from comparative studies of young adults' education and work in England and Germany. The comparison showed how, within the highly structured Eastern German system, external factors were held to be responsible for failures in education and work. By contrast, English labour structures are part and parcel of a system that is difficult to read. It incorporates the belief that "opportunities are open to all". Hence, people tend to blame themselves for their failures in education and in the labour market.

Evans (2017, this volume) suggests that individual biographical dispositions act in a close interaction with structural conditions. Agency is seen by Evans as socially situated, but not as determined by the environment. In line with this, people's own work identities influence how they respond, individually and collectively, to the structures and changes in their work organisations and how they use their knowledge, skills, and emotions in coping with stress.

Bounded agency is further characterised by a sense of reflexive self-authorship. Evans (2017, this volume) takes as an example the narrative accounts of middle-aged women who authored certain life events – events which triggered personal and professional development and which promoted an altered orientation to life trajectories. The life narratives were shown to be empowering for the practice of personal agency in challenging life situations.

Individual employees and their professional identities are considered by Hökkä et al. (2017b, this volume) in their chapter which addresses agency from the perspective of emotions. According to the SCSC approach, individual work identity is intertwined with the practice of professional agency and influences such agency. Reciprocally, the practice of agency influences professional identities, and agency is needed to renegotiate and to craft one's own professional identity.

10.3.3 Agency and Emotions

The chapter by Hökkä et al. (2017b, this volume) considers the emotions that can be identified in the accounts of employees working in education and how these emotions are related to the agency enacted in their work. From a meta-synthesis of five empirical studies (conducted by the authors), Hökkä et al. identified three major aspects with which emotions were involved; these were (a) professional identity, (b) work, and (c) social relationships. Emotions were categorised as positive and negative. The findings indicated that positive emotions impelled educators to change their professional identities and thus to practise *identity agency*. For example, within a curriculum reform, professional agency was enacted through changing and enacting professional identities.

By contrast, negative emotions acted, at least initially, as an obstacle to identity crafting. In experiencing negative emotions, caused by curriculum changes, teach-

ers strengthened their *current* identity, which was in opposition to the goals of an educational reform. Negative emotions, manifested as disappointment, a sense of unfairness, feelings of inadequacy, and a fear of failure, emerged if employees could not work in accordance with their professional interests, ambitions, and competences. A lack of autonomy, deriving from restrictive leadership practices at work, triggered negative emotions, such as anxiety, dissatisfaction, frustration, and anger. In some cases, these negative emotions caused employees to practise agency by choosing to resign from the current employment and to find a new workplace within a less restrictive organisation. When this happened, the employees reported highly positive emotions, such as satisfaction, enthusiasm, and enjoyment. Such positive emotions were in general connected to resources which supported the practice of agency by the employees (teachers, educators, and researchers). This meant that they participated, exerted influence, and made choices in their work and in their work communities. The most important resources for such a practice of agency consisted of supportive relationships with colleagues at work.

Hökkä et al. (2017b, this volume) concluded that negative emotions were indeed related to the enactment of professional agency, in terms of both change-oriented and maintenance-oriented decisions regarding an employee's professional identity and career. A notable finding among employees was that, initially, fear inhibited the enactment of professional agency, paralysing agentic actions. In contrast, among leaders, fear seemed to have the power to activate the persons concerned. The authors thus concluded that the relationship between emotions and agency at work is connected to issues of power and to the power relations operating in a given situation.

In a study on leaders' agency and emotions, Hökkä et al. (2017b, this volume) further showed that autonomy and independence were major reasons for positive emotions, such as joy and satisfaction. When collegial and social relationships were positive, and when there was collaboration and a sense of making progress, positive feelings, such as joy, confidence, and strength, were supported. By contrast, negative emotions – such as frustration, exhaustion, inadequacy, fear, and a sense of oppression – were triggered among leaders by the same restrictions on agency as among employees. The negative feelings emerged from being unable to work in accordance with personal identity commitments or from having no means to influence upper-level decisions – which for the most part involved demands to raise productivity with decreased resources. Nevertheless, Hökkä et al. demonstrated how leaders moved from the major negative emotion of inadequacy – caused by the high demands they set for themselves – towards greater leniency towards themselves while participating in a 1-year leadership coaching programme. Within this, they were able to reframe their work identities, in company with other leaders of similar status.

Up to the present, there has been insufficient research on how emotions are related to the practice of different kinds of agency at work, especially in connection with work-related learning. In such research, the role of power relations should be carefully considered, since these seem to have a major role as mediators between emotions and agency.

10.4 The Connections Between Agency and Learning

The title of this book refers the ways in which agency and agentic perspectives are related to work-related learning and to development. This indeed points to the original reasons for addressing agency. Most of the authors in this book started to investigate agency at work because they observed agency to be closely intertwined with learning at work. However, as we have seen, differences exist in how work-related learning is understood and hence also in how it may be connected to agency.

Work-related learning has mostly been understood as practice-based professional development, i.e. as something more than the traditional school-based acquisition of knowledge. Workplace learning is seen as the experience-based development of professional expertise, taking place through social interaction and individual reflection on work practices. In addition, workplace learning takes place through the shared, innovative development of work practices, as well as through employees' competences.

Such an understanding implies that learning and the practice of agency overlap. This is especially the case regarding the transformative aspect of work agency; within this, agency (understood as the shared development of work practices) overlaps with the notion of learning as something based on behaviour and action. Such notions are prominent in the present book (e.g. in the chapters by Evans 2017; Goller and Harteis 2017; Hökkä et al. 2017b; Hopwood 2017; Messmann and Mulder 2017; Smith 2017; Wiethe-Körprich et al. 2017; all in this volume). Viewed in this light, learning and agency come close to being identical, and we arrive at what can be described as an agentic perspective on learning, or put simply, agentic learning. Such agentic learning comprises not only the individual acquisition of new competences but also transformative changes in work practices. In addition, an agentic perspective implies that learning at work takes place through the crafting and negotiation of work identities (e.g. Hökkä et al. 2017b, this volume).

Such learning is also typical among film and TV freelancers (Evans 2017, this volume). These are people who need to invest in “who they are”, which requires constant production of the self at work. Evans understands this as a highly agentic process. It contributes to the individual's own development while also collectively reproducing and reconstituting TV and film industry norms. Freelancers identify themselves with their craft, with entrepreneurialism, and with capacities to learn. These are integrated practices, combined as a cohesive and coordinated set of actions and activities. The chapter by Evans provides a fascinating description of how this integration occurs.

Other kinds of agentic learning processes are described in an examination of the work of novice nurses (Evans 2017, this volume). For example, a recontextualisation of knowledge takes place when a practitioner recognises a new situation. In this case, the person can experience a feeling of being overwhelmed. This requires a response, impelling the individual towards the acquisition and application of knowledge.

In current working life, agentic activities can also revolve around longer-term processes which, once again, are broadly identical with work-related learning. Such learning can be both individual and collective in nature, taking place through individual and/or shared engagement with developmental activities.

10.5 Future Avenues of Research

In summarising the previous chapters, we can roughly categorise them according to whether agency is considered in relation to work and production generally or from the perspective of the individual employee. From the point of view of working life overall, what matters is to provide affordances for enacting agency at work. For the individual employee, on the other hand, agency deserves to be considered from a lifelong and life-wide perspective.

As this book demonstrates, conceptualisations of agency at work have been increasingly linked to professional and work-related learning. The growing interest in the role of agency for work-related learning is manifested in the accounts given here, which include also related concepts, such as innovative work behaviour. All in all, the eight chapters provide comprehensive coverage of the notions applied in theorising agency within work-related learning.

Since the concept of agency has a multidisciplinary background, including in particular the social sciences, it seems appropriate that social science approaches are prominent in most of the notions presented here. In addition, it should be noted that most of authors of this book approach agency from an (adult) education perspective, but that ideas deriving from psychology, philosophy, and organisation research are present also. The concept of agency is by no means limited to any one of these disciplines. Rather, as suggested by Evans, we need to construct multidisciplinary spaces to obtain multifaceted conceptualisations of the phenomenon. Such a multidisciplinary space could position definitions of agency along three major dimensions, emphasising (a) structural vs. individual aspects, (b) transformative vs. reproductive aspects, and (c) external vs. internal aspects. These three dimensions seem to represent the most important coordinates along which understandings of agency can be located. In the future, we may seek analytical lenses in order to “zoom in” to any given aspect on the coordinates.

Moving from theoretical discussion to empirical research, we need empirical modelling of the structure and components of agency. Thus, in addition to qualitative research (which is what has mainly been conducted so far), we will need quantitative instruments to assess agency within different work contexts. So far, there has been a lack of such validated instruments, although there are ongoing attempts to construct them. Such measures could give evidence, for example, on how different kinds of *leadership practices* are connected to the employees’ sense of agency. Here it should be noted that, insofar as agency is connected to issues of power, employees’ sense of agency at work is strongly linked to varieties and styles of leadership. In addition, forms of social interaction can be expected to influence the emergence

of collective agency at work – an aspect which has so far not been studied sufficiently. In these various domains, practical instruments will be needed to measure the levels of agency – including also the lack of it – thus providing the knowledge needed to develop agency in the workplace.

From the perspective of the individual, discussion on agency has recently extended into temporal dimensions, seeking to encompass the past and future as well as the present (Biesta et al. 2015). This implies that agency would be linked to not only to individuals' or groups' short-term or situational activities but also to their long-term life goals and to the entire life courses of those concerned. So far, it can be suggested that agency has not been studied sufficiently from a life-course perspective. In addition, longitudinal research strategies and intervention studies are still very much needed. Here, one can point to some recent examples of longitudinal research, addressing in particular how collective agency was developed within a 6-month identity coaching intervention (Hökkä et al. 2017a; Vähäsantanen et al. 2016a, b). In addition, a study has been conducted in the context of an educational reform. This study indicated how, among teachers, the nature of the agency practised changed over a period of 1 year, starting from the beginning of the reform (Vähäsantanen 2015). However, we need more empirical research on how to influence agency, including research on the long-term consequences of interventions aimed at employees' and leaders' learning and development.

Overall, there is a clear need for an individual life-course perspective on the enactment of agency and on the construction of agentic capacities. This is particularly the case within an increasingly complex and unstable global labour market. Within the labour market, increasing numbers of people – especially young people – are working as freelancers, casual workers, and zero-hour contract workers. Hence, more research is needed on their practice of agency and on how to support work-related learning in work that lacks the boundaries provided by traditional work organisations. So far, we have little understanding of the kinds of identity agency enacted in such work and of the kinds of support required. This is urgent, since policies on developing working life and reducing youth unemployment are highly dependent on the kinds of start-up companies that are emerging outside traditional work organisations and on the initiatives undertaken by these companies. Growing digitalisation and automation (including the use of robots) will mean less low-skill work and will change the requirements in more professional work. This implies that people will have to possess new forms of agency for the new jobs that become available.

Within the subject-centred sociocultural approach to agency, agency is understood as something that is always exercised for certain purposes and within/through certain (historically formed) sociocultural and material circumstances. It is also constrained and resourced by these circumstances. In researching agency, we thus need to specify the kind of agency we are referring to and the purposes for which it is enacted. To take an example, identity agency involves renegotiating and crafting one's professional identity (Ruohotie-Lyhty and Moate 2016), whereas epistemic agency refers to solving knowledge-based problems (Hopwood 2017, this volume). Agency has indeed been specified in terms of its purpose by Pantic (2015), who refers to agency for social justice.

Another way to specify agency may incorporate the contextual conditions within which professional agency is practised. For example, Pappa et al. (2017) specify three different forms of agency that apply in teachers' work, referring to classroom-based agency, relational agency, and sociocultural agency. Hökkä et al. (2017a), for their part, have referred to *collective agency*, which was manifested when a group of arts and craft teachers transformed their marginalised professional position within a teacher education organisation (through a group-based identity workshop). In so doing, they achieved a strengthened collective identity and, as a consequence of this, a more empowered position.

Last but not least, for the future, we can expect changes in pedagogical methods (Vähäsantanen et al. 2017). These will aim to promote work-related learning through the strengthening of professional agency at work. It can be anticipated that, with the concept of agency as a central focus, there will be new definitions of pedagogical aims and new practices arising from them.

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Part II
Empirical and Methodological Issues

Chapter 11

Individuals' Mediation of Learning Professional Practice: Co-working and Learning to Prescribe

Stephen Billett and Christy Noble

11.1 Learner Agency and Intentionality in Work-Life Learning

The role of workers' agency and intentionality in mediating their learning stands as a key basis for understanding how their occupational development occurs through and across working lives (Edwards 2005, Taylor 1985). This claim arises, in part, from the realisation that much of individuals' learning and development across working life occurs outside of the circumstances of intentional education or training interludes (Hodkinson and Bloomer 2002, Billett 2014a). Despite being privileged in contemporary schooled societies, the contributions of educational provisions, training and direct interactions with teachers, trainers and more informed workers are not the only sources and mediation of work-life learning. Workers learn more frequently through their personally mediated efforts and actions than when guided by others (Billett 2014b). In this way, much of their learning is premised on how they construe what they experience at work and construct knowledge based on how they elect to apply what they know, can do and value. For instance, the data from the Program of International Assessment of Adult Competence indicates that Australian workers at all ages report learning more frequently through their work activities than when being assisted by co-workers and supervisors (Australian Bureau of Statistics 2013). Even where there is access to close guidance and direction from others in the workplace, individuals still mediate how they engage, interact and learn from those interactions (Valsiner 1998, Lawrence and Valsiner 1993, Filliettaz

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2010, Goodnow and Warton 1991). There is nothing particularly new here. This situation has seemingly occurred across human history for most workers and across most working lives (Epstein 2005, Singleton 1989, Goody 1989). In the absence of educational institutions and programs, and those positioned as teachers, the vast majority of learning of occupations arose through individually mediated learning efforts through working which often includes direct or interact engagement with other workers (Billett 2014d).

The key process through which individuals' learning has been personally mediated is through what is referred to as mimetic learning, that is, through observation, imitation and practice (Billett 2014d). Only in relatively recent times has there been the provision of educational programs for the majority of occupations. Even then, those programs are usually associated with initial preparation and in hybrid environments (e.g. colleges, schools, universities) that are quite distinct from the circumstances in which work is enacted. This situation requires graduates of those programs to mediate what they have learnt in such settings with what they experience in the particular circumstances of occupational practice they encounter (Eraut 2004b, Veillard 2012, Mistre 2005). So even in an era privileging educational programs and institutions, much of the learning required for effective work practice and employability occurs through workers' engagement in their everyday work activities and interactions. These activities and interactions comprise goal-directed actions through which learning arises (Guberman and Greenfield 1991, Lave 1988, Rogoff and Lave 1984, Scribner 1984, Lave 1993). More than the means to achieve occupational goals and complete tasks, engaging in the thinking and acting required for those activities has legacies in changes to what individuals know, can do and value (i.e. learning). These outcomes comprise new learning, refining and honing what is already known, extending and elaborating what individuals know, can do and value within their occupational practice (Billett 2001b). So, as individuals undertake their work tasks and, in specific circumstances, and seek to achieve outcomes that are often ill defined, these activities are generative of new learning, because activity structures cognition (Rogoff and Lave 1984). Also, in a consideration of personally mediated learning is the readiness of individuals to learn. Readiness can be described as an individual's ability to learn from what they know, can do and value (i.e. their conceptual, procedural and dispositional capacities). That readiness arises through individual ontogenies: their life histories, which has led to a particular understandings, abilities and values. More than sets of capacities that readiness shapes what individuals are able to learn from subsequent experiences (Billett 2015).

It would be wrong, however, to view personally mediated learning processes, such as mimetic learning or mimesis, as being wholly solitary acts of discovery. Individuals' efforts, capacities and intentions also mediate interpersonal engagements with other workers (Billett 2014b, Baltes and Staudinger 1996), albeit mimetically. These interactions are often necessary means for understanding what is not able to be discerned through individuals' efforts and construals. They are required for understanding concepts (Pea 2004, Vosniadou et al. 2002), developing kinds and range of procedural capacities required to achieve goals (Rogoff 1995, Gowlland 2012, Singleton 1989) and the development of dispositional aspects of work practice

to be made accessible and appropriated (Brougère 2015, Kloetzer et al. 2015, Cleland et al. 2014). These occupational capacities have their source in the social world and need to be accessed either through more experienced and informed partners or through socially derived sources, such as artefacts, observations and clues and cues provided by the physical and social environment.

However, these interactions are not restricted to didactic interactions as in teaching. Processes of observing; identifying goals, variations in those goals and the practices to be enacted to achieve them; and making judgements about the worth of approaches, procedures and conceptions all arise inter-psychologically (i.e. between the person and social world) as mediated by individuals themselves (Billett 2014b). When there is a need to work closely or collaboratively with others, such interactions also assist developing the kinds of shared understandings or intersubjectivities (Trevarthen 1980) that make this co-working possible (Rogoff 1990, 1995). These kinds of work are commonplace and, in some sectors, such as health care, are the orthodox means of practice (Molyneux 2001, Salhani and Coulter 2009). This co-working also potentially offers opportunities for that which is not best learnt through discovery to be secured through everyday work and working life. This potential extends not only co-working within the same occupation but with those from other occupations and specialisations, such as interprofessional working.

Central to the discussions here is that this co-working and learning is characterised by individuals' mediation of what they experience when interacting with others. This process is characteristic of human agency at work. Rather than being the unidirectional passage of knowledge (i.e. behavioural-like transmission from experts to novices), these processes are bidirectional and interdependent (Lawrence and Valsiner 1993, Valsiner 1994). How this kind of learning might be supported as part of everyday co-working activities and engagements in work is of particular salience for realising the potential of work settings as learning environments.

The case made within this chapter is that individuals' mediation of experiences and learning is not restricted to solitary endeavours but occurs in socially ordered and enacted activities such as co-working. Indeed, it is hard to imagine circumstances where individuals do not mediate their experiences and decide, as Wertsch (1998) would propose whether they engage in mastery or appropriation. Mastery is the superficial engagement with what is suggested to meet immediate mandates or requirements. Appropriation is the degree by which individuals concur or accommodate with what they experience and take it to themselves. Ultimately, regardless of the quality, strength of press or pervasiveness of what is suggested by the social world, individuals will ultimately mediate it, as Foucault (1986) concluded in one of his final works and as Newton (1998) advises. Valsiner (1998) claims that we have to mediate what we experience otherwise we would be overwhelmed by the suggestions of the social world, as do constructivist theorists of all kinds (i.e. Baldwin, Piaget).

These processes are illuminated and discussed here through a consideration of how co-working between novice doctors and pharmacists can be used to promote novice doctors' learning about prescribing medications (Noble and Billett 2016). From this example, some initial considerations are advanced about the kinds of

practice curriculum and pedagogies that might support learning through co-working. Foundationally, some conceptual considerations are then proposed to capture and explain this process of learning. It is an outlining and elaboration of some of these processes that are used to propose how they can promote individuals' mediation of work-related learning.

In making its case, this chapter progresses in the following way. Firstly, the necessity of learning across working life is emphasised and initial considerations given to how best that learning might be promoted and secured. These considerations stand as bases upon which processes of learning for occupational practices can be evaluated. Then, the conceptual and procedural foundations of co-working and co-learning are discussed drawing upon literature that illuminates this phenomenon. Concurrently, using the example of novice doctors co-working with pharmacists, these processes are illuminated. Some suggestions about curriculum and pedagogic practices conclude this chapter.

11.2 Ongoing Learning Across and Through Working Lives

It has become almost a truism that individuals need to learn continuously across their working lives. It is important, nevertheless, to consider what this means and, to separate a consideration of learning across working lives from that of lifelong education. The need to learn across and through working life is premised upon sustaining the ability to respond to the (1) changing patterns of employment in occupations, (2) requirements for occupational practice, (3) the specific requirements of particular work places, (4) evolving work practices and (5) changing compositions of workforces (Billett 2006b, Barley and Batt 1995). Occupations lose their economic purchase or place in the labour market, industries relocate away from workers' communities and other occupations emerge and/or expand their patterns of employment. These changes variously render individuals' occupational capacities redundant; demand significant changes in what they know, can do and value or alternatively strengthen their employability; and provide a platform for occupational growth and advancement (Noon and Blyton 1997, Bernhardt 1999). Even when occupations enjoy continuity of demand (e.g. medicine, nursing), the requirements for their effective practice change as the tasks they address, the expectations and goals for those occupations evolve in response to their roles, ambits and practices.

Common to all these circumstances is a requirement for ongoing learning across working life. Some of that learning is transformational. Yet, much is also about expanding and extending what workers know, can do and value. That learning inevitably involves being able to respond to new requirements for occupational practice, novel practices in workplaces, ways of working and with others. Even if it were possible to provide educational provisions to support the range and extent of this learning, that alone would be insufficient. Learning to resolve problems locally and develop broader capacities to work effectively and dispositions associated with working with others and in new ways are unlikely to be taught: they need to be

learnt. So, how can we understand how best that learning can progress and be supported and sustained?

As a starting point, it seems reasonable to accept that working life comprises not only workers exercising their knowledge, but continually extending and expanding it, through their work activities and interactions (Gauvain 1993, Lave 1988, Rogoff and Lave 1984, Billett 2014c, Eraut 2004a). In this way, learning associated with work practice continually occurs. Just as it is impractical and unfeasible for learning across working life to be directly supported by educational provisions (i.e. ubiquitous lifelong education), as noted, these kinds of provisions are unlikely to be able to support the development of much of this knowledge. Experiences in classrooms are best suited to supporting particular kinds of learning but are limited in being to assist other kinds, some of which require to be learnt locally and through work practice. Medical students might learn about the chemical constitution of pharmaceutical products and how they act on the human body through classroom-based experiences. Learning to prescribe (i.e. making clinical decisions and selecting appropriate pharmaceutical products and their usage), however, may be best realised through experiences in healthcare settings. This is because part of that learning is taking into account a range of factors which can only be understood within the context of health care practice.

It is helpful, therefore, to understand how and what learning can best occur within work environments and through work experiences aligned with the exercise of the knowledge that needs to be learnt. Engaging in goal-directed activities aligned which requires accessing the knowledge to be learnt, and occurring in physical and social environments that are authentic in terms of the application of the knowledge to be learnt, and access to it through direct and indirect guidance is known to lead to effective learning outcomes (Anderson 1993, Shuell 1990, Eraut 2007, Billett 2001b, Scribner 1984, 1985, Lave 1990, 1993, Jordan 1989). It is necessary to consider, however, how particular forms of knowledge can be learnt through specific work activities and interactions. All of this leads to a need for practices supporting that learning as part of everyday practice that are aligned with the desired learning outcomes. Yet, beyond the provision of experiences, much of the knowledge required for work (i.e. occupational concepts, procedures and dispositions) ultimately arises through the personal mediation of those experiences in work settings. This is how the vast majority of occupational knowledge has been learnt across human history, as noted above.

At the same time, there is knowledge requiring assistance to be accessed and mediated, because it cannot be secured through individuals' intentionality and agency alone. Occupational knowledge, such as that used by doctors, nurses, hairdressers, butchers etc., arises from the social world through its development, refinement and transformation across human history. This kind of knowledge needs to be made accessible so it can be mediated and variously learnt by medical students/doctors, nursing students/nurses and so on. In addition, there is concern about workplace errors, risks to patients, students, clients and passengers, etc., and such matters cannot be left to experimentation, chance or serendipity. Instead, there needs to be means by which the learning of this socially derived knowledge can be promoted in and through working life, by co-working with more experienced or expert others.

11.2.1 Supporting the Effective Mediation of Occupational Knowledge

What can be drawn upon to inform accounts of this learning is a range of personal and workplace practices that have arisen over time and provide bases for considering how this learning can be supported in contemporary workplaces. There is a tradition of apprenticeship as a mode of guided learning, for instance. In contemporary times, apprenticeships are typically seen as being a process through which a more experienced worker guides the development of a less knowledgeable and experienced worker. The original meaning of the word apprenticeship is, however, about the apprentices' learning through personal mediation. The act of apprehending – seizing and taking the knowledge required for work – is central to the origins of the word apprenticeship. It is a process that is mediated by those who had to seize the knowledge to be learnt. There is little evidence of direct teaching occurring (Billett 2014d). It was the apprentices' jobs to learn. This view of apprenticeship is evident in Japanese traditions (Singleton 1989) and contemporaneously in the Middle East (Marchand 2008). So the most long-standing tradition of apprenticeship is that of a model of learning, not the contemporary educational model of apprenticeship. Whilst there is much interest in considering apprenticeships as a way of learning occupational knowledge, central to this model is the mediation of what is being experienced by learners/apprentices, albeit supported by access to sources of knowledge that assist that mediation.

There are well established explanations for these kinds of learning processes. Broadly referred to as comprising inter-psychological or inter-mental processes, they comprise interactions between individuals and social world that permits the learning of socially derived knowledge. Occupational knowledge, the requirements for particular occupational practice and situational factors all shape inter-psychological processes. Sometimes, those processes are positioned to privilege the suggestion of the social world over individuals' mediation. An example here is how the norms that form practices of education, including teacherly action, are sometimes seen as leading to or determining learning of particular kinds. The transmission of these practices is seen to lead to individuals' appropriation of what is intended they will learn. The stronger the suggestion, it is sometimes assumed, the more likely that what is being taught will be learnt with fidelity. Behaviourists are not alone in making this claim with much of educational provisions premised on this kind of assumption (i.e. transmission of knowledge). Yet, what is projected and suggested by the social world is nothing more or less than an invitation to engage with and take it up (i.e. change as in learning). The degree by which what the social world projects is understood, its intent comprehended and its contributions engaged with by individuals is subject to how they mediate it, that is, how they construe what is experienced and direct what they know, can and value in responding to it, by degree in person-dependent ways. Given what and how we know arises through personally mediated processes across the life course, there will always be person-dependent bases for knowing and learning. Indeed, if the suggestion of the social

world was clear and unambiguous and taken up uniformly by individuals, there would be no need to communicate (Newman et al. 1989). That is, it would be so unequivocal and unambiguous that making sense of and learning from it would be directly derived from it and would not require clarification, elaboration or questioning. However, it is not and cannot be. Hence, we need to communicate to clarify, understand further and engage with what is being suggested. These projections can arise through edict, what we see modelled and practiced, or are commanded or even forced to do. Yet even under duress, we are able to disregard, interpret or construct meaning from what we experience (Valsiner 1998).

Beyond what the social world projects is how individuals come to engage with, take up, adapt, adopt or transform what is being suggested. Hence, rather than interpsychological processes being unidirectional, they are bidirectional and these processes are mediated by the person. Here, it has been proposed that these processes can best be described as being interdependent.

11.2.2 Centrality of Interdependence

The point made above there is an interaction between the person and the social suggestion. There are particular ways in which these processes play out within working life. In many situations, and work is one of these situations, the learner needs to engage with the social world and, often, to secure the kinds of knowledge which arises from but are required by that world. The requirements, practices, strategies and understandings that comprise occupational practice arise and are honed and refined within the social world. Individuals need to access social sources and contributions, such as more experienced partners, to secure that knowledge (Eraut 2007, Rogoff 1990, 1995). So, there is a dependence on the social world for individuals to learn this knowledge and remake and progress it. Yet, the social world also is dependent on individuals to enact, sustain and transform the socially derived practices called occupations. This process of sustaining and transformation occurs as individuals deploy their socially derived occupational capacities that arise in their everyday work activities. Engaging with, enacting and exercising occupationally related knowledge leads to its honing and refinement, as well as its transformation. Hence, there is interdependence between the social world and individuals who engage with, learn from and then enact socially derived knowledge required for effective occupational practice.

The process of working and learning captures well this interdependence, particularly when working closely with others. Yet, given the distinct personal bases of coming to know, engage and respond and the different ways in which the social suggestion is projected means this interdependence will always be relational (Billett 2006a). All of this suggests that models of learning that emphasise teaching and didactics can only ever be sufficient to a certain degree and will always need to take into account how individuals come to engage with and learn from the social sources. That engagement is not restricted to the discovery-like solitary processes of work-

ing and learning. Instead, that engagement in the learning of demanding socially derived knowledge that constitutes much of occupational practice necessarily encompasses working with others who can provide access to the knowledge that needs to be learnt. So, teacherly practices and educational programs are helpful in developing some of the knowledge required for occupational practice. Engagements with others in the workplace, however, can provide accessible and effective learning support for many workers within and across their working lives.

An instance of interdependence being practiced is through processes of co-working and learning. In the following section, this mediating process is illustrated and discussed using an example of co-working and learning in healthcare. In this instance, crucial medical knowledge (i.e. prescribing) needs to be learnt.

11.3 Co-working and Learning

The efficacy of working and learning collaboratively is well established. Collaborative problem-solving where the more experienced partner initially plays the lead role and then progressively affords greater opportunity for the less-experienced practitioner to engage in the thinking and acting (and decision-making) for occupational performance is seen as an effective means of knowledge that is “hard to learn” and hard to be acquired (Gott 1989). These relations are found in many dyads, such as those between parent-child, newcomer-old timer, craftsperson-apprentice, etc. Perhaps most famously, these relations are captured in the Vygotskian-inspired concept of Zone of Proximal Development (Cole 1985). This is the extent to which novices’ learning can be extended by the close guidance of a more informed partner, an approach that has been advanced in a range of accounts (Brown and Palinscar 1989, Rogoff 1995, Hutchins 1993, Fuhrer 1993, Roschelle and Teasley 1995). This approach was adapted for school settings to offer models of how teachers might assist students learn how novices do in work settings (Raizen 1989). The cognitive apprenticeship (Collins et al. 1989) and reciprocal teaching and learning (Palinscar and Brown 1984) approaches were both premised on modelling how expert practitioners think and act and progressively placing more of the responsibility on the learners. Common to these approaches is that learning through joint problem-solving is not about didactics transmission of knowledge from experts to the novices. Novices or learners engage in these activities initially with modelling and being guided by more experienced partners and progressively taking on greater role in the problem-solving activity. This extends to identifying solutions and then monitoring their enactment. It is the learners that engage in and mediate the cognitive activities, sensory engagement and also appraising and applying what they know, can do and value to the specific task progressively and learn from them incrementally. There are also a range of curriculum conceptions associated with this kind of progression. These include novice engagement in increasingly mature approximations of modelled activities (Gott 1989) and the ordering of modelling, coaching,

scaffolding and fading within cognitive apprenticeships (Collins et al. 1989) and expert modelling and then practice (Brown and Palinscar 1989).

There are a number of other examples within occupational practice such as healthcare, for instance, where these forms of co-working and learning occur. There are the grand rounds which are used to assist medical students and novice doctors to further develop their capacities guided by more experienced clinicians, maybe using questioning and prompts to engage less experienced clinicians in learning through understanding patient cases (i.e. conditions and treatments). Then, there are also models such as parallel practice – in which a medical student or novice doctor engages in history taking and patient examination independently, before these are checked and discussed with a more experienced doctor (Billett and Sweet 2015). These kinds of co-working relationships can extend across occupations, as when pharmacists assist novice doctors learning to prescribe in acute hospital wards. This particular case provides helpful example of how this process of socially engaged but personally mediated learning progresses.

11.4 Pharmacists and Novice Doctors Co-working and Co-learning: Case Study Example

To illustrate and elaborate the conceptual and procedural foundations of co-working and co-learning and how these interactions were mediated by novice doctors, prescribing practices in an acute hospital setting were examined by interviewing pharmacists and novice doctors. Senior doctors or consulting physicians were also interviewed because of the central role they play in leading and supporting prescribing practices in these hospital settings.

11.4.1 Overview of Prescribing Practices

Before examining this instance of co-working and learning, a brief overview of prescribing practices in acute healthcare settings (i.e. hospitals) is provided. Prescribing medications is the process through which medications are initiated, monitored, continued and modified based on individual patient requirements (Lum et al. 2013). There is a high risk of prescribing errors causing patient harm in acute healthcare settings, particularly by novice doctors (Ashcroft et al. 2015). To manage this risk and provide safe and effective prescribing practices, input and engagement from several professional groups including nursing, medical and pharmacy staff is often required (Tully et al. 2009, Dornan et al. 2009). Each of these practitioners plays a unique role in the prescribing process. For instance, doctors diagnose and select medications and pharmacists review prescriptions and then dispense medications, whilst nursing staff review prescriptions and prepare and administer

medications to patients. Whilst each group of practitioners brings particular perspectives and knowledge to prescribing practices, when working effectively together, reductions in prescribing errors are evident (Leape et al. 1999), as is the potential for learning effectively about these practices.

Prescribing practices are complex. The common goal for each group of practitioner is patient care (i.e. safe and effective outcomes from medications). Other factors contributing to prescribing complexity include monitoring medication costs, rapid turnover of hospital patients and increasing elderly patient population (Aronson 2009). Given this complex of factors, doctors and pharmacists need to work collaboratively (i.e. work together) in addressing patients' medication-related needs (Leape et al. 1999). Prescribing complexity is further augmented by its interprofessional approach, situated character and high risk of errors; not surprisingly, this often causes novice doctors to describe being inadequately prepared and overwhelmed when initially engaging in prescribing (Noble and Billett 2016, Lewis et al. 2014, Rothwell et al. 2012). As noted earlier, some of the requirements for effective prescribing cannot be taught in medical school. But equally, they cannot be learnt through discovery alone. What is required is experiences that provide the opportunity to engage in this task and make decisions and enact procedures but also have access to guidance and support of a more expert partner who can make accessible and assist appropriate required knowledge. This guidance has to progress in ways sensitive to the diversity of readiness of the novice doctors to learn effectively including their experiences of prescribing practices, how they are positioned as learners and their opportunity to co-working and learn in the healthcare setting, as discussed below.

11.4.2 The Inquiry

The practical inquiry reported here was undertaken in a large Australian teaching hospital in 2014. The work environment is intense with doctors caring for many patients and with organisational pressures to discharge patients expeditiously to ensure patient flow through the hospital. In this context, prescribing medications is an essential activity for the medical profession albeit prescribing medications to treat particular conditions, relieve symptoms or ensuring that patients' medications are managed safely when they go home or to a nursing home. Safe prescribing can ensure that patients receive appropriate medications. However, there are risks associated with prescribing, because if errors are made, patients can be harmed. Thus, prescribing medications safely is a central concern for the healthcare sector, and pharmacists play pivotal roles in managing the risks associated with medication errors (Roughead et al. 2013).

A qualitative study was undertaken comprising interviews with members of three groups of health professionals: (1) medical consultants, (2) novice doctors and (3) pharmacists working in the same teaching hospital. These categories of practitioners were selected as informants as each make significant contributions to and the

learning of prescribing practices in acute healthcare settings. For greater detail of the participants and data gathering and analytical procedures, please see Noble and Billett (2017).

After ethical clearance was secured, 34 focused interviews were conducted with 11 novice doctors (3 females and 8 males), 10 medical consultants who were clinical supervisors (3 females and 7 males) and 13 pharmacists (11 females and 2 males). The duration of interviews ranged between 15 and 50 min and was electronically recorded. The interviews were guided by a topic guide that included the following: for novice doctors, how they have developed as a prescriber and what and who has contributed to this, and for pharmacists and medical consultants, how they contribute to novice doctors' development as prescribers and workplace factors contributing to and hampering this. The interviews were conducted until thematic saturation was achieved. The recorded interviews were transcribed verbatim and these were analysed thematically.

11.4.2.1 Novice Doctors' Experiences of Prescribing Practices and How Positioned as Learners

When novice doctors commence practicing medicine in hospital settings, they are almost immediately required to engage in prescribing. Despite their limited experience, senior clinicians expect them to actively engage in the prescribing process through activities such as writing up medications as directed by their consultants, making decisions about dosing of medications and prescribing medications for patients' discharge. These novice practitioners are supported by the senior doctors (i.e. consultants) who have responsibility for and inform prescribing decision making but rely on and may overestimate the readiness of these doctors. In turn, these novice doctors may be reluctant to question what they do not understand or seek clarification lest they be perceived as being inept. Pharmacists' role is to review the prescriptions for safety, accuracy and efficacy and ensured that legal and financial aspects are adhered to in the prescriptions.

As can be seen, there are a number of factors influencing how novices mediate their engagement with prescribing practices. It has more facets to it than the textbook goal of ensuring safe and effective prescribing. Given the complex nature of prescribing in the acute setting and the range of stakeholders engaged in prescribing practices and based on their university experiences, the novice doctors claimed that when transitioning from medical school to practice they had not secured the necessary capacities required to effectively prescribe in hospital settings. These doctors reported not being adequately equipped for a number of facets of prescribing. These included selecting medicines for patients with multiple comorbidities (i.e. interrelated health conditions) and understanding the institutional prescribing requirements (e.g. hospital prescribing formulary). Because of their need to develop prescribing capacities, these novices were receptive and agreeable to guidance and supports from more informed partners, i.e. senior doctors and pharmacists. As the novice doctors become more experienced, they required less support and guidance.

However, in the first phase of their employment, they move through a range of different clinical settings across relatively short rotations (e.g. every 5–10 weeks). These rotations include surgical to medical specialties in which they are likely to require guidance for prescribing practices within new clinical specialties.

Secondly, these novice practitioners report intense social pressure to integrate into medical teams and ensure that the team is happy with their performance (e.g. completing tasks quickly and effectively) and presenting as competent. This pressure influences how these doctors engaged in prescribing practices. For example, in the context of a very busy ward round, when asked to prescribe a medication by a senior clinician, these doctors might write the prescription without seeking clarification lest this interrupt or take time unnecessarily from busy colleagues. When the pace of work was not as great, and they were asked to prescribe unfamiliar medications, they reported taking time to check prescribing guidelines, call pharmacists or other doctors to monitor their understanding and to consciously advance their knowledge of prescribing. In this way, social and workplace factors shaped the kinds of co-working arrangements in which these doctors could engage. These bases for co-working shaped opportunities for co-learning.

11.4.2.2 Novice Doctors' Co-working and Co-learning with Pharmacists and Senior Doctors

All the novice doctors interviewed indicated that both pharmacists and senior clinicians provided support and guidance for their learning about prescribing practices. How these co-working and learning arrangements progressed varied considerably across senior doctors and pharmacists. Some key features of this co-working are now be elaborated.

Working with Senior Clinicians Firstly, doctors indicated that a key means by which they learnt to prescribe was through co-working with more senior colleagues. This comprised either observing prescribing decision-making or being told by the senior doctors what to prescribe. In these ways, these novice doctors' prescribing tends not to occur in social isolation, and permitting minimal mediation in the decision-making, but through processes in which the responsibility for prescribing decision-making resides with the senior doctors. Through this co-working, they reported learning about the processes and goals of prescribing and making judgements about the efficacy of prescribing practices they had experienced. The novice doctors report appraising what they knew about prescribing compared to their senior colleagues. But the co-working and co-learning relationship was founded in having to trust these seniors' decision-making. This is not surprising given their seniority and experience. This circumstance reportedly led to mimicking their decisions in subsequent prescribing events. This approach to learning through co-working was justified by some of the novice doctors, by them not wanting to expose their lack of understanding or inadequacies to senior clinicians who would ultimately write assessments about their performance.

Whilst these novice doctors were sometimes provided with explanations and justifications for prescribing decisions by senior clinicians, this did not always happen. The consequence of learning through reproduction, as reported by the novice doctors, was that it failed to generate coherent conceptions of prescribing, as they were dependent on that advice. In other words, they were not developing a coherent conception of prescribing practice because they did not always understand what they were prescribing and why.

Conversely, the senior clinicians claimed it was the novice doctors' responsibility to seek guidance and clarification to ensure they understood what they were prescribing and why. These clinicians seem unaware of the novice doctors' reluctance to expose their lack of understanding or concerns about their standing as competent practitioners being questioned within the medical team.

The novices' mediation of experiences through co-working with senior doctors was privileged over those with pharmacists. The reasons given by the novices were the senior clinicians represented the novices' future selves and the novices' role models and made decisions about their future employment and abilities to secure specialist training. In terms of prescribing, senior doctors were usually ultimately responsible for decision-making, whereas pharmacists were mostly engaged with after the decision-making had occurred and the prescription has been written. Moreover, in some instances, because senior clinicians were responsible for prescribing, junior doctors indicated that they would determine whether pharmacists' recommendations were accepted. Because of the close co-working relationships in the medical team and the importance of relations between the doctors, this form of co-working shaped intersubjectivity, that is, the degree of shared understanding about prescribing practices. In contrast, co-working with pharmacists proceeded on quite different bases.

Working with Pharmacists All novice doctors and consultants interviewed agreed that novice doctors' co-working with pharmacists was essential for developing prescribing capacities. When these novice doctors entered the workplace, prescribing practices presented them with new sets of practices, systems and processes. As noted, these included being aware of formulary requirements, prescribing for discharge or taking accurate medication histories. Through co-working with pharmacists, the novice doctors reported identifying the need to develop their prescribing capacities and were initially very receptive to pharmacists' guidance and support. Pharmacists were viewed as being benign in influencing their careers and seen as a safe professional to ask for advice "without losing face". The pharmacists described sitting with the novices showing them how to write up their first prescription charts, for example. Importantly this type of support was not described by the senior doctors, yet they expected that the new doctors undertake this task.

Through their interactions with pharmacists, these novice doctors learnt about and appraised their prescribing capacities and were exposed to pharmacists' unique perspectives of prescribing practice. This includes what pharmacist indicated were necessary for safe and effective prescribing. Some conceptions, procedures and dispositions, engaged with through co-working with the pharmacists, included valuing

accuracy and clarity in writing prescriptions, discharge prescribing considerations and adhering to legal and formulary requirements. These capacities were considered as being important by the pharmacists as they were responsible for and aware of the risks associated with imprecise prescriptions or prescription not meeting legal or formulary requirements. In these ways, pharmacists presented to the novice doctors different bases for and conceptions of prescribing practices than those of the medical team. The consequence here is a consideration of how these two different kinds of co-working can be best utilised to develop effective and situationally acceptable prescribing practices. Extending this consideration further is the potential role that regular co-working with the entire medical team by pharmacists (e.g. through ward rounds) might provide opportunities for the ongoing development of all medical staff and pharmacists through the kinds of reciprocal and relations forms of learning advanced earlier in this chapter. Yet, part of that co-working between pharmacists and novice doctors is to progressively pass more responsibility for prescribing to them, as also discussed above.

Given this potential for differing perspectives, it is important to note that the findings from the interviews indicated that the senior doctors were not always aware of the frequency of the pharmacist interactions with novice doctors, or the types of requests and suggestions they made. The consequence was that senior clinicians were not always aware of how their novices were performing and because the workplace hierarchy of the novices may privilege the senior clinicians' guidance and be less likely to integrate the pharmacists' recommendations into their prescribing practice. Moreover, some the senior doctors indicated that they did not need to be involved in these interactions as the prescribing issues being addressed are likely to be minor and did not require their engagement. Thus, despite the claim by senior doctors that pharmacists were the medication experts, such views suggest that senior doctors may not be fully aware of the potential contribution that pharmacists can make to novice doctors' learning, with its implications for how novice doctors engage in co-working with pharmacists. Views about co-working are likely to be reinforced for novice doctors if they have seen pharmacists co-working with consultants. For example, the fact that pharmacist suggestions are not always accepted by senior clinicians and being able to justify their preference is a form of modelling that the novice doctors need to have learnt. This is because doctors are, ultimately, responsible for prescribing. So, such co-working should not be seen as pharmacists lacking agency, but instances of productive co-working and in ways that make deliberations about prescribing even if their recommendations are not accepted. In these ways, considerations about how pharmacists can assist the senior doctors' conceptualization of prescribing practice are also generative of intersubjectivity between both professional groups.

11.4.2.3 Developing Effective Co-working Relations

An important consideration is how to develop effective co-working relations across professional groups. In this situation, there is a risk that novice doctors' mediation of learning through co-working, with pharmacists, could initially be premised on

contested bases. It is part of the pharmacists' job to check prescriptions for errors. Those of novices are likely to be more error prone, leading to concerns by novice doctors that pharmacists are monitoring and checking their prescriptions rather than co-working with them. Some novice doctors identified the risk that because their interactions with pharmacists often focused on their errors; it could be generative of anxiety and tension, as well as posing a challenge to the medical hierarchy and with it their nascent professional subjectivity as doctors. Instead, positioning the pharmacists to co-work closely with novice doctors as normative (or better still establish this practice when they are in medical school) might serve to develop effective co-working whilst promoting the subjectivity of both kinds of practitioners. Also, as noted, pharmacists reported that as novice doctors gained more experience, their co-working changed as those doctors were able to exercise their discretion more confidently. This delineates a pathway or curriculum of progression for learning prescribing. As they exercise more discretion, like their more senior counterparts, these novice doctors should become more selective and strategic in the parts of pharmacists' advice they seek out and adopt. So, whilst valuing co-working with pharmacists, how co-working relations are established and evolved became a central issue in the efficacy of co-working and learning.

Both the novice doctors and pharmacists reported variation in the nature of their interactions (e.g. location and relationship status) that, in turn, influenced how these doctors constructed knowledge about prescribing. For example, the pharmacists noted that their interactions with novice doctors were less productive via phone and/or when they were unknown to novice doctor. In the absence of close co-working relations, there were reported instances of novice doctors indicating that they were unlikely to integrate these learnings into their practice and might summarily dismiss their recommendations entirely. The most productive interactions presented as when pharmacists' contributions were legitimised by senior medical consultants. This occurred when novice doctors observed pharmacists productively discussing prescribing practices with senior clinicians. These types of interactions, which usually occurred on ward rounds, legitimised the pharmacists' role and co-working as the novice doctors could observe this co-working being modelled. This type of interaction provided an opportunity for novice doctors to construe and construct their learning about how to engage with pharmacists. It is important to note, when considering the kinds of curriculum and pedagogic practices to promote co-working, that each of these types of interactions had different potency, in terms of novice doctors' learning.

Whilst the novice doctors indicated that they mostly valued their interactions with pharmacists, as indicated above, variation in their outcomes were reported. These differed significantly in how novice doctors co-worked with senior clinicians and their learning from those experiences. When working with these clinicians, novice doctors reported tended to trust and mimic them, whilst with pharmacists they were making decisions about whether to integrate their recommendations into practice. There are a number of factors likely to be contributing to these ways of co-working with pharmacists. Firstly, how novice doctors interacted with pharmacists appeared shaped by their ontogenies (i.e. personal histories). In particular, those with little or no experience of interacting with pharmacists during medical

school needed to negotiate the co-working relationships more than those that had. Secondly, unlike their interactions with senior clinicians, the novice doctors were not benefiting from high levels of intersubjectivity or shared understanding with pharmacists. These circumstances are likely because interactions with pharmacists were less frequent than with medical colleagues. This could be redressed by pharmacists attending ward rounds and/or describing and presenting their rationale for recommendations and decision-making.

Finally, as co-working as a means of mediating learning is a bidirectional process, an associated consideration is how pharmacists were positioning novice doctors as learners, what is being experienced by these novices from co-working with pharmacists. Also, there are considerations of how well-equipped junior pharmacists might be in co-working with novice doctors and senior clinicians. They may struggle and be ill equipped for such a role (Noble et al. 2015).

11.5 Curriculum and Pedagogic Practices Promoting Individuals' Mediation of Learning

The discussion about novice doctors co-working with pharmacists and senior doctors specifically illustrates the processes of learning prescribing through work and how to promote learning through practice more broadly through personally mediated processes that are characterised by human agency. Moreover, through this analysis, the factors influencing how the novice doctors mediate their engagement with these co-working interactions were identified and included novice doctors needing to develop prescribing capacities whilst at same time needing to integrate into the medical team. These premises provide insight into the kinds of practice curriculum and pedagogies that can support learning through co-working.

11.5.1 Practice Curriculum Considerations

When considering how novices might best access experiences in work settings to progressively secure the skills required to practice prescribing effectively, this inquiry has identified three key curriculum considerations. These are (1) establishing the curricular intention, (2) enabling early co-working and (3) curriculum enactment as integration.

First, the intention of the practice curriculum is to support the development of shared goals, values and interests in prescribing practices for all participants involved in its enactment. Novice doctors' mediation of their learning through co-working with pharmacists was likely influenced by a limited understanding of prescribing practice goals and values arising from the kinds of experiences and learning in medical school and distinct professional perspectives they encountered in clinical work. This is not through any fault of novice doctors. Instead, it arises as a result of

an ordering of experiences that are not directly supported or enabled access to experiences whereby these differing perspectives were made apparent. Directing curriculum intentions in this way is important because it ultimately contributes a shared understanding of prescribing practices and supports effective co-working and learning. Concurrently, it has the potential to address the mismatched values with respect to prescribing. In the context of interprofessional co-working, as in this instance, the findings suggest that making these different values explicit is important, especially during initial interactions. In these ways, co-working will be enacted on the basis of a shared understanding about these diverse perspective and the precepts and contingencies through which they are exercised. In the case of pharmacists and novice doctors, it is likely to contribute to improved ways of novice doctors and pharmacists' interactions whilst assisting with understanding the pharmacist role and their particular contributions to safe prescribing practices.

Second, with this intention in mind and as outlined above is novice doctors' readiness to prescribe and how that might be promoted. Despite the novice doctors' extensive experiences of working with senior doctors through clinical placements during medical school and learning about prescribing through their interactions with medical colleagues, they were not ready to prescribe. This appears to be a product of having had limited experiences of this task and no opportunities to work with pharmacists for learning about prescribing. To address this conundrum, one approach might be for medical students to have experiences co-working with pharmacists. These opportunities might include medical students, whilst on clinical placements, observing pharmacists in their day-to-day work or working with a pharmacist on particular tasks. For instance, taking patients' medication history with a pharmacist and then discussing medication concerns from a pharmacist's perspective, then writing up prescription charts with the pharmacists providing advice on the strategies and rationale for approach, offers a pathway from classroom-based experiences for learning prescription to prescribing practice. The aim here is to structure learning experiences to support medical students and novice doctors' understanding and conceptualising related to the process of prescribing. That is, how the different components of prescribing – writing up medication, dispensing and administering – are interrelated and influence patient outcomes. Broadly, this approach to sequencing learning is likely to provide experiences which support effective co-working with other professional groups (i.e. interprofessional working and learning).

Third, the inquiry indicates that the current enactment of the practice curriculum is somewhat siloed. That is, the novice doctors were having to mediate and integrate the pharmacists' and senior doctors' guidance. Whilst these forms of guidance were enabling novice doctors to work beyond their existing readiness, their construal and construction of these experiences (i.e. learning) were not always coherent. Some suggestions and recommendations were dismissed without fully understanding why these decisions were made or their consequences. Given the importance of senior doctors, in terms of mediating novice doctor learning to prescribing, curricular consideration needs to be given to how these co-working experiences can be sequenced and integrated with co-working with pharmacists, as part of their everyday working.

As both sets of practitioners believe co-working with pharmacists is important, some sequencing of opportunities for collaborative guidance from both pharmacists and senior doctors in the context of prescribing are worth consideration.

One approach for enhancing the medical school curricula would be to ensure that senior doctors introduce pharmacists to medical students and that their own interactions with pharmacists are role modelled in the context of ward rounds. In the clinical workplace setting, consideration could be given to how senior doctors might become aware of and support pharmacist-novice doctor interactions and engage pharmacists in contributing to novice doctor learning in each rotation. This might include encouraging pharmacists to plan learning curricula (i.e. pathway of experience) for novice doctors they are co-working with so that pharmacists are positioned as learning facilitators rather than focusing on monitoring novice doctors' prescriptions to identify mistakes.

Consideration of structured engagements between experienced pharmacist and medical students in their placements and then novice doctors at beginning of their rotation may assist this development. Moreover, senior doctors and pharmacists need to find ways for collaboratively supporting the practice curriculum. In these ways, practice curriculum considerations to augment learning through co-working need to include the distinct personal bases for how individuals are coming to know, engage and respond to these interactions. This acknowledges how learner agency mediates these interactions and then attempts to harness them to augment learning through actively engaging in these interactions.

11.6 Pedagogic Practice Considerations

This inquiry also identified a number of activities and interactions that enriched and augmented workplace learning experiences. These comprise practice pedagogic considerations that include (1) engaging with expertise from another profession, (2) participation in activities (e.g. ward rounds) that are pedagogically rich and (3) supporting pharmacists' development as learning facilitators. The particular features of these practice pedagogies were identified in ways to improve the efficacy of pharmacist-novice doctor co-working and contribute to explaining processes of individuals' mediation of learning.

First, working with experts or more experienced co-workers can promote learning in work settings (Billett 2001a). The findings suggest that whilst pharmacists possess expertise related to prescribing, they were working with novice doctors who lacked readiness to prescribe and thus had the potential to not only extend the novice doctors' scope of learning (i.e. zone of proximal development) but also provide a distinct and important perspective (e.g. pharmacist values, dispositions) that differed from the medical team. This means novice doctors needed to mediate these differing perspectives, a process that is complicated by a work setting in which medical hierarchies are rife. This suggests that to augment the pharmacists' pedagogic contributions, consideration might be given to how pharmacists can work

with novice doctors. Pharmacist might consider working more closely with senior doctors by engaging in problem-solving, and the senior doctors share their learnings and practices with the junior doctors. In these ways, learning is likely to be augmented by models of co-working that can be enacted within rather than operate against decision-making processes vested in hierarchical responsibilities for patient care.

Another approach to augment learning about prescribing through co-working with pharmacists might be to routinize pharmacists' attendance on and participation in ward rounds. This is the setting where important decisions about prescribing are made and novice doctors are likely to be increasingly involved in this decision-making as their careers progress. Moreover, this routine workplace activity also provides regular opportunities for pharmacists to collaborate in prescribing practices. The pharmacists' involvement in these activities will likely enhance the inter-professional dialogue about prescribing practices and promote the importance of the pharmacists' contributions to safe and effective prescribing practices for all medical staff. In these ways, the preferences, values and justifications around prescribing practices can be articulated, whilst at the same time providing opportunities for individuals to mediate their learning by engaging with a range of professional perspectives, all of which should ease novice doctors learning to prescribe.

Finally, the findings about novice doctors' mediation of co-working with pharmacists emphasise the bidirectional nature of knowledge sharing. Currently, pharmacists often engage with novice doctors on the basis of monitoring and correcting prescribing errors by novice doctors. By adopting a co-working approach with novice doctors, in particular, shifting from focusing on error identification to supporting and facilitating learning more positive outcomes might be realised. In other words, rather than reactively responding to prescribing errors, pharmacists proactively guide novice doctors' prescribing. For example, they might take responsibility, in collaboration with senior doctors, for shaping the prescribing learning curriculum and sequencing learning activities when new novice doctors rotate into the team. This requires careful consideration as this tends not to be addressed in the pharmacy curriculum nor is the focus of pharmacy practice (Noble et al. 2014, 2015).

11.7 Co-working and Individual Mediation of Learning

This chapter has focused on how human agency in the form of intentional and focused mediation of co-working experiences can progress in circumstances where what is needed to be learnt requires engaging with more informed partners. The concept of co-working and learning is advanced to describe the circumstances in which this personally mediated process might best progress through social interactions. It is understood that not only is crucial knowledge, such as prescribing, found within the social world, but social partners are essential for accessing, developing and situating the use of that knowledge. Yet, such access and such engagements are often necessarily enacted within circumstances that offer different perspectives,

hierarchies and even contestations. These are called workplaces. Here, it has been suggested that there are ways in which the everyday work arrangements and interactions can be adapted to promote more effective co-working and learning even within hierarchical work relationships, across occupations, and in circumstances where crucial decision making occurs. Hopefully, drawing upon the practical inquiry and its findings, a consideration of personally mediated learning becomes more nuanced through a consideration of the kinds of co-working processes discussed and advanced here. Balance is sought here amongst the importance of individual meaning making (i.e. the construal and construction of knowledge), the need to engage with social sources of the knowledge required to be learnt, the inevitable hierarchies and disciplinarity that constitute demanding work and work practice, to offer ways in which that learning can progress effectively. Central here is the importance of interdependence and reciprocity in learning and development. Then, in conclusion, some broad considerations for practice curriculum and pedagogies are advanced as a means of understanding how intentional and focused learning can progress through work.

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Chapter 12

Working Relationally on Complex Problems: Building Capacity for Joint Agency in New Forms of Work

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12.1 Introduction

Whether practitioners are managing flood plains, maintaining supply chains or turning around the life trajectories of vulnerable young people, they are working on complex problems that call for the exercise of different kinds of expertise and specialist knowledge. The range of necessary expertise and knowledge needs to be involved in scoping the problem as well as in responding to the demands the problem presents. Our premise is that this kind of inter-professional, or inter-disciplinary, endeavour requires the exercise of relational forms of agentic action, which allow the informed agency of expert practitioners to engage with the problem, while they are also attuning their response to those of the other experts.

These kinds of collaborations are on a continuum, which runs from the inter-professional teamwork of established accident-response teams to fleeting collaborations where a mental health worker gives short-term specialist support to a family, which is the focus of a long-term social work intervention. Established teamwork arises from creating routines and permits the rapid sharing of professional meanings across professional practice boundaries (Middleton 1998). The fleeting or short-term collaborations occur in sites of intersecting practices, sites which may have neither pasts nor futures (Edwards 2010), and call for quick and responsive actions with experts from other practices to diagnose and respond to a problem. Both kinds of collaboration are relevant to our discussion of how a capacity for joint agentic action is built in new forms of work.

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In this chapter we offer a cultural-historical framing of agency and collaboration across professional practices. These ideas are later used to examine the work of social workers and psychologists who participated in a multiple case study involving four schools. Their actions in the activities we observed, potentially at least, involved collaborations with each other and with teachers and other school staff. We have examined whether and how their professional agency is nurtured and exercised in each school and compared different forms of iteration between person and practice in their exercise of agency as professionals.

Our setting is a recent intervention in public schools in Chile, which aimed at addressing the educational inequities arising from social exclusion, compounded by a school system with high levels of social segregation (Valenzuela et al. 2014). The Preferential Subsidy Law (SEP No 248), passed in 2008, channelled additional funding to schools to address the barriers to learning faced by vulnerable children and young people. Schools have used some SEP monies to employ educational psychologists and social workers (who we refer to as new professionals), basing them in schools to work with teachers, students and their parents to reconfigure the students' life trajectories. These appointments called for new forms of work and were inserted into the existing institutional practices of the schools. Consequently, the incoming practitioners needed to find ways of aligning their work and its purposes with those practices.

We are working with a cultural-historical idea of practice where “practices are knowledge-laden, imbued with cultural values, and emotionally freighted by those who act in them” (Edwards 2010, p. 5). Practices, in this definition, are inhabited by those who act in them and are made up of activities in which people take intentional motivated actions. Drawing on the work of Vygotsky and his colleagues on the relationship between cultural practices and cognition, we recognise that we are shaped by the practices we inhabit but may also shape them. A.N. Leont'ev, a close colleague of Vygotsky's, put the relationship as follows: “society produces the activity of the individuals forming it” (Leont'ev 1978, p. 7). This rather gnomic statement alerts us to the need to attend to both person and practices, when interpreting actions taken in activities within those practices.

Where is agency in all this? Shotter's description of Vygotsky as someone who “is concerned to study how people, through the use of their own social activities, by changing the conditions of their own existence can change themselves” (Shotter 1993, p. 111) reminds us that we are not socially determined actors, but work agentially in and on the practices, within which we learn and develop. But how do we recognise this agency? Roth's answer, and one we would agree with, is that agency unfolds in people's acts in actions in activities within institutional practices and frequently has a moral dimension (Roth 2006). This sense of commitment to values alluded to by Roth is also core to Taylor's discussions of self and agency, where he has explained agency as being able to set goals for oneself and evaluate for oneself whether one has met them (Taylor 1977), and to Edwards' work on relational aspects of joint agency (Edwards 2017).

12.2 Cultural-Historical Approaches to Agency and Collaboration Across Professional Practices

12.2.1 *The Agentic Actor*

Our aim in this chapter is to conceptually and empirically account for whether and how collaborations were accomplished in these new professionals' actions in activities inserted into institutional practices. As Dreier (1999) observes, attention to individuals as they move in and across practices requires us to analyse the practices as well as the actions of the person we are following. Individuals attempt to make sense as they navigate practices and, where possible, negotiate their positions within them. In doing so, they interpret and respond to the possibilities for action and to the demands that are presented. This dialectical relationship between person and practice is at the core of cultural-historical approaches to learning and development, explaining what Leont'ev (1978) meant by his statement that "society produces the activity of the individuals forming it" (p. 7). Importantly, such a dialectic implies a degree of agency. As Bozhovich (2009) has argued, our mental schemata are not simply passive reflections of the environment in which we act. Instead, we are sense-makers, purposefully seeking meaning and trying to position ourselves so that we are competent and able to act in the world. One would expect nothing less of professionals, and, as we shall see, the new professionals were trying to make sense of and position themselves in the worlds they had entered.

The schools the new professionals entered were each "figured worlds" of meanings and practices (Holland et al. 1998, p. 52). The new professionals needed to learn to recognise, interpret, navigate and negotiate these figured worlds to take forward their own professional intentions. But as Hedegaard (2012) has observed, institutional practices also carry within them historically accumulated demands. Hedegaard suggested that insufficient attention is paid to these demands when we consider the dialectical relationship between person and the settings in which they act. We would agree, and would also point, to an important difference between navigate and negotiate when taking action in the figured worlds of the schools, with the latter indicating a greater opportunity to exercise agency than the former.

Vygotsky's dialectical approach to learning means that recognising and interpreting possibilities for action are important (Vygotsky 1997). His argument was that for learning to occur, the problem being tackled needs to be understood in ways which capture its complexity. Engeström's (2015) recent work on expansive learning takes these ideas further, but they are also inherent in Vygotsky's attention to how teachers should work alongside learners to engage them in identifying the key features of a task (Vygotsky 1997). Failure to recognise and be able to respond to what a problem entails may mean that actors orient themselves towards its less demanding aspects or navigate around it, whereas negotiating one's pathway through activities in practices suggests that the salient features of the activities that make up the practice have been recognised and worked on, so that one is positioned within them. Importantly, the new professionals were creating new forms of work

and could not call on existing experts in the practices of the schools to help them recognise and interpret demands; instead they had both to make sense of the figured worlds of the schools and negotiate their positions within them or, failing that, navigate around the barriers they encountered.

12.2.2 *Collective Agency*

A collective view of agency and its potential for negotiated transformation, focusing on changing systems, has been recently developed (see Kerosuo 2017, this volume). This approach is based in systems-oriented Change Laboratory formative interventions (Engeström 2011; Haapasaari and Kerosuo 2015; Heikkilä and Seppänen 2014). In these studies transformative agency arises in collective agentic actions during organisational change, such as criticising the current activity, highlighting the need for change and envisioning new patterns or models of the activity. Writing about agentic action for systemic change in fluid and potentially unstable systems, Engeström points to how such systems integrate different kinds of expertise and sees negotiation as key to systemic change. “Negotiation is more than an instrumental search for a singular, isolated compromise decision it is basically a construction of a *negotiated order* (Strauss 1978) in which the participants can pursue their intersecting activities” (Engeström 2008, p. 230). Here negotiations can result in major discursive shifts and the recategorising of the tasks being worked on in the practices of the organisation. These kinds of shifts enable organisations to deal collectively with new roles and ways of working together.

As we shall see, negotiating these discursive shifts proved difficult for most of the new professionals in the study, not least because the figured worlds of school practices are often inflexible. The reason frequently given is that schools rely on fixed routines to give order to the school day and safety for children and teachers. Schools as institutions hover on the brink of social breakdown, making stability key to the order that allows for school work to be done.

However, rigid systems are not the only way forward for schools. Orton and Weick, in their seminal 1990 paper on organisations as loosely coupled systems, discuss how educational systems such as schools and universities require a dialectical relationship between central direction and professional discretion. They point to how “looseness in some dimensions” (such as professional discretion) “should be complemented by coupling on other dimensions” (Orton and Weick 1990, p. 213). The coupling they particularly identify in relation to educational systems is a focus on specific goals or outcomes and shared values. As we shall see, some schools managed this dialectic better than others. In brief, the new professionals were parachuted into schools, which consisted of established practices, to help them with children with problems. But the school practices were, to different degrees, resistant to the exercise of the professional agency of the new professionals.

12.2.3 Relational Form of Agency

So far we have pointed to how individual pathways may be navigated or negotiated and the challenges for systemic transformations through collective agency. Finally we come to relational and interpersonal forms of agency as they are explained within cultural-historical theory. Edwards has written extensively on relational aspects of agency in studies of collaboration across practices (Edwards, 2005, 2010, 2011, 2012, 2017), employing three concepts: relational expertise, common knowledge and relational agency. These concepts, which capture a capacity to recognise, respect and work with the professional motives, and therefore what matters in the professional practice of potential collaborators, are also discussed in Hopwood (2017, this volume).

Relational expertise, a capacity to collaborate with others on complex problems, is the over-arching concept. It enables the joint interpretation of the problem as well as the joint response. Knowing how to recognise the expertise of others and to be able to make one's own expertise explicit is crucial here. Exercising relational expertise involves being professionally multilingual, recognising the meanings that different practices give to words and their importance in each practice discourse. From a cultural-historical perspective, it is a capability that can be broken down into being able to: (a) recognise the standpoints and motives of those who inhabit other practices and (b) mutually align motives in interpreting and responding to a problem. Relational expertise is therefore an additional form of expertise which augments specialist expertise, such as educational psychology, and makes fluid and responsive collaborations possible.

To understand how to enact these collaborations, we turn to the concept of common knowledge (Edwards 2010, 2011, 2012, 2017). The common knowledge that is relevant to smooth inter-professional work is not knowledge of how to do each other's jobs: that route leads to hybridity and the loss of specialist expertise. Instead common knowledge, in the sense used here, is a resource to enable collaborations and comprises what matters in each profession, the motives that shape and take forward professional practice, such as school attendance for teachers or promoting students' wellbeing in educational psychology.

Knowledge of each other's motives allows the psychologist to recognise that the teacher wants children in school to access the curriculum, while the teacher can see links between the psychologist's emphasis on emotional wellbeing and school success, and the psychologist can connect a teacher's need for students' task engagement to their own role in developing students' emotional self-regulation. In brief, the motivated interpretations and intentional responses to problems of practice, which are made by practitioners from different practices, are brought into alignment through the use of shared understandings of what matters for each collaborator. With this resource, work on complex tasks such as engaging vulnerable children with schooling is accomplished.

The common knowledge that mediates these collaborations is constructed and reconstructed in use. It does not arise spontaneously but is created over time in interactions across practice boundaries, which emphasise the following:

- Recognising similar long-term value-laden goals, such as children's wellbeing, as a shared moral purpose that holds all motives together
- Revealing specific professional values and motives in discussions, by legitimising, asking for and giving reasons for interpretations and suggestions
- Listening to, recognising and engaging with the values and motives of others

Common knowledge is important when planning long-term support for a student and is vital when joint action needs to be taken quickly to remove a child from harm. Here we come to the concept of relational agency in professional work. Relational agency is evidenced when each practitioner recognises what matters for the other professionals involved and is able to understand how other practitioners first interpret the problem and then how they are able to respond to it. This careful listening to and understanding of each other's motives means that by working together, they can quickly expand their initial understanding of the problem, work on the whole set of difficulties and then calibrate their specialist responses in ways which work with rather than against each other (Edwards 2005, 2010, 2012, 2017). In brief, relational agency is an enhanced form of agency, where the resources of more than one practice are brought into play rapidly to work on a complex problem.

The broad research question we address here is therefore *How are relational expertise and the capacity for relational agency built among the new professionals and exercised in their work with teachers?*

12.3 The Research Study

12.3.1 Context

We highlight four characteristics of Chile's educational system to contextualise the schools and the new professionals. First, the system comprises 8 years of elementary and 4 years of secondary education. Some schools serve only elementary students, others only secondary and others grades prekindergarten (PK) or 1st through 12th. A national curriculum and national annual tests to measure educational performance (SIMCE) are compulsory. Second, since 1981 educational policies have promoted a quasi-market model for educational provision and have advanced: administrative decentralisation, incentives for the participation of private providers and parental choice.

There are three types of schools: (a) public schools administered by municipal governments that are tuition-free, non-selective and funded through a state attendance-based subsidy (voucher); (b) private schools funded through the same voucher, with the majority charging parents an additional tuition fee, operating as

for-profit businesses and selecting students; and (c) private schools fully funded by parents or private organisations. Third is the steady decline in public school enrolments. In 2011, private voucher schools enrolled 51.8% of the students, private schools fully funded by parents enrolled 8.9% of the students, with public schools representing 39.3% (Santiago et al. 2013). With 2016 enrolments at 36%, the flight from public schools has been fuelled by the perception that private school students outperform public school students. Consequently, public schools are the “choice” of those who cannot choose due to financial or academic constraints. Fourth, the educational system is highly segregated by social class. In PISA 2012, Chile showed one of the highest levels of correlation between student’s home background and attainment on the mathematics test (OECD 2015).

Since 2005, several policies have attempted to address these inequities, but their impact remains unclear. In this context the SEP law provides an additional state subsidy to schools which enrol a high proportion of socially vulnerable students, demand no fees, do not expel students and are nonselective. By 2011, 99% of the public schools had contracted to implement SEP (Weinstein et al. 2010). The new professionals are expected to contribute to reducing absenteeism and dropout by addressing barriers to learning that can be linked to social exclusion. The SEP law requires schools to implement a school improvement plan based on an institutional self-assessment. The Ministry of Education largely predefines the outcomes for the plan (i.e., SIMCE, attendance and dropout rates), with little room to address school-specific aspects in the institutional self-assessment (Weinstein et al. 2010).

12.3.2 Participants and Their Schools

The research study used a multiple case study design and was conducted in four public schools in one urban municipality in Chile’s Valparaíso Region. After securing permission from the municipal department of education, the principals from all schools serving secondary students were contacted by phone to gather preliminary information on the work configurations for the new professionals and to explain the study. The four schools purposively selected represent diverse configurations in terms of (a) guidelines provided by the school leadership to the new professionals and (b) their opportunities for collaboration with teachers. The schools selected were then contacted to secure permission from the principals, followed by a meeting with the psychosocial department, to secure their voluntary participation expressed in informed consent.

Three of the schools were deemed ineffective schools based on their SIMCE performance. Additionally, in two of these schools, there was also a steady decline in enrolment (see Table 12.1). In all schools the secondary programmes were vocational-technical, with students graduating with skills, such as secretarial or welding, enabling them to enter the job market immediately. All enrolled a large proportion of students from low-income households.

Table 12.1 Schools' characteristics

Characteristic	School 1	School 2	School 3	School 4
Enrolment	470	1,024	549	1301
Enrolment trends	Declining	Sustained	Declining	Sustained
Grades	PK-12	9-12	PK-12	9-12
Social vulnerability index ^a	89	76	82	78
Performance on the SIMCE test 10th grade language arts ^b	Below	Similar	Below	Below
Number of teachers	59	94	60	97
Psychosocial department	2 psychologists, 1 social worker, 1 special educator who coordinated the team	3 psychologists, 1 social worker, 1 guidance counsellor	2 psychologists, 1 social worker, 1 guidance counsellor, who coordinates the team	2 psychologists (one of whom coordinated the team), 2 social workers, 1 guidance counsellor, 2 special education teachers

Sources: Ministry of Education School Database for the year 2015 and the schools

^aIndicates de proportion of students who meet the criteria for social vulnerability, such as family income below the poverty line, parents' level of education, concentration of low-income families in the neighbourhood. ^bThe average score on the test is compared to the average obtained by schools that serve students from similar socio-economic backgrounds

PK prekindergarten

In each school one school psychologist (of whom three were men) and one social worker (three were women) working with students in grades nine and ten were invited to participate, along with the school principals. The new professionals also nominated teachers for interviewing, one who referred students frequently and one who rarely connected with the new professionals. We do not draw directly on the teacher interviews here but used them for cross validation. Four researchers undertook the fieldwork, with the two lead authors leading the development of the interview protocols, supervising fieldwork and undertaking the analysis.

12.3.3 Data Sources and Procedures

An initial audio-taped individual interview was undertaken with each new professional to ascertain their professional histories and their interpretations of the school demands they recognised and tackled. This was followed by 2 days of job shadowing (McDonald 2005). A second round of audio-taped interviews was then

conducted to probe the observed actions taken in activities within the practices of the school or, if relevant, outside the school. We were interested in whether the new professionals navigated practices or were able to create activities and negotiate their actions, what kind of dialectical relationship between the new professionals and the institutional practices of the schools existed, whether and how they used forms of common knowledge to aid collaboration and whether signs of relational expertise, common knowledge and relational agency could be found and under what conditions. These interviews yielded individual transcripts averaging 20 single-spaced-typed pages.

A total of 16 days of job shadowing occurred over 2 weeks in late 2015. When job shadowing the researcher arrived at the school by the time the professional clocked in and left when they clocked out. Each day, the researcher took extensive field notes recording every action, except when the new professional requested privacy with a student or parent. On those occasions, the professional later briefed the researcher on the content of the activity. Field notes recorded the beginning and ending of activities (i.e. department meeting, teacher consultation, courthouse visit and others), who participated and what was said and done. Augmented by reflective memos, these notes yielded a total of 128 single-spaced-typed pages.

12.3.4 Data Analysis

The analysis involved the two first authors in jointly reading transcripts of interviews and shadowing notes to familiarise themselves with the schools and the new professionals' work. These broad pictures of the schools and activities led to four sub-questions:

1. How did any joint work with existing school staff take place?
2. What demands were recognised by the new professionals in their work?
3. What relational resources did they use when collaborating with others?
4. How did the iterations of person and practice shape the new professionals' sense of their own agency?

These questions enabled the selection of lengthy extracts from the data set, which were translated into English by the second author. The first author then undertook the initial analysis of these extracts by using the sub-questions to interrogate the data. Her analyses were then checked by the second author, and checks for internal validity, by testing these analyses against interview data from school staff, were also undertaken.

12.4 The Schools as Systems

Before directly addressing the research sub-questions, we discuss key features of the psychosocial departments and the schools, by paying attention to how they may be categorised in terms of the exercise of professional discretion within tightly or loosely coupled systems (Orton and Weick 1990). These snapshots are based on interviews and 2 days' work shadowing with the new professionals and interviews with the school principal or member of the leadership team in each school.

School 1

This PK–12th grade school prepares students primarily for the food and services industries and had falling enrolment. The principal had been appointed 18 months earlier and charged with turning the school around. The researchers observed a school climate where teachers worked in isolation with a high degree of discretion over how they dealt with difficulties with students. The psychosocial department was coordinated by the special education teacher who was a member of the senior leadership team and liaised between the psychosocial department and the principal. The department had a high degree of autonomy, within the principal's aim that they would work closely with teachers to support teachers' work with students. They were not required, for example, to report to the principal on the work they did. The principal arranged new working space for the department, each professional had a private office and there was a shared meeting room. Every morning department members arrived early to breakfast together and discuss specific cases. Shadowing revealed that the psychologists were visible in the school, talking with students and teacher colleagues and responding to requests, while the social worker tended to engage in activities, such as paperwork and sorting clothes, based in the office and she emphasised rule-following to keep requests for her time at bay. In Orton and Weick's (1990) terms, the system for working with vulnerable children in the school was loosely coupled, and the new professionals needed to work at creating the coupling that would allow them to work productively with teacher colleagues.

School 2

This technical-vocational school (grades 9–12) had been led by the same principal for 18 years. She had a reputation locally for providing high-quality education, and recruitment remained good. She had appointed two psychologists prior to the SEP law. SEP funding allowed her to augment the psychosocial department with a third psychologist, a social worker and a guidance counsellor. There were clearly defined job descriptions for the new professionals. While she expected them to work on students' behavioural and social and emotional problems, the new professionals were involved in defining their work. The principal met regularly with the psychosocial department, and they reported directly to her. The school was split-site, and the department was located in both sites, depending on the grades they were servicing. The school had identified the social competences required by students over their 4 years there, and the psychologists worked within that framework. There were

regular team meetings over food, where they worked on problems, including those identified by the principal. The psychologists were visible in the school, talking with students and teachers and responding to requests. The social worker did more paperwork than his colleagues but ate lunch with teachers, visited classrooms to talk with teachers and worked through teachers to pass information to parents. This school showed evidence of the dialectic between professional discretion and central direction through shared values that Orton and Weick (1990) identified as a way of working for educational organisations.

School 3

This PK–12 school had falling enrolment and used SEP monies to appoint two psychologists and a social worker, all of whom were newly qualified. The principal was recently appointed and delegated the coordination of the psychosocial department to the school counsellor who, though experienced, was recently appointed. The counsellor passed on directives from the principal as instructions. The principal declined to be interviewed, again delegating to the counsellor. The department worked in an open-plan office without privacy when talking with students or parents. The new professionals saw their first goal as convincing the coordinator of their professional expertise. She allocated tasks and took on activities they felt were better suited to psychologists or social workers. She also required the new professionals to keep logs of their activities, submitted every 2 weeks. The intention had been to have weekly team meetings, but these rarely occurred, and the new professionals found themselves responding to unannounced visits from external agencies and frustrations with school systems, which were not set up to provide the information they needed for their main role of referring students to other agencies. Students were brought to their office by paraprofessionals, and there was no evidence of the new professionals being visible within the school and engaging in informal conversations that might have connected them directly with teachers or students. This group of new professionals worked as an isolated unit within the school, with a high degree of central direction and no opportunities for exercising professional discretion within the school. They were often critical of school staff and appeared disadvantaged in terms of their impact on the school by the emphasis on tight coupling through central direction.

School 4

This school prepared grades 9–12 for work in commerce. It had been highly selective, but by 2015 was no longer allowed to select students, though recruitment remained good. The principal was a very recent appointment, succeeding a long-term incumbent. He was getting to know the institution and did not appear to be actively managing the school. The school population had become increasingly diverse, and one task for the psychosocial department was to work with teachers to help them understand this new intake; however, the roles of the new professionals were underspecified. One outcome of this lack of clarity was that teachers expected the new professionals to “fix the child”; while the new professionals were aiming at a more holistic approach to changing how the school met the needs of a diverse student body. In taking that approach, they found themselves at odds with and

resistant to the school's increasing emphasis on norms, regulations and punishments for students. There were departmental meetings focusing on case work and plans for supporting students. The psychologist and social worker were visible in parts of the school, mostly talking with members of the administration and planning workshops for teachers. Like School 1, the school's system for working with vulnerable children was very loosely coupled (Orton and Weick 1990), and the new professionals needed to work at creating the connections, such as shared goals, that would allow them to work productively with teacher colleagues.

12.5 Findings

12.5.1 *How Did Joint Work with School Staff Take Place?*

In each school the new professionals needed to negotiate their way into, or navigate around, the figured worlds of the institution. We therefore distinguish between the opportunities for either agentically negotiating new forms of work into school practices or cautiously navigating around the practices. As we shall see, in School 3 neither option was possible.

In the loosely coupled School 1, the new professionals demonstrated self-care, breakfasting together, developing strategies for connecting with teachers and providing the coupling based in shared values that they felt was needed. They were primarily navigating practices and teacher expectations. In doing so they were responding to requests from teachers and at the same time focusing on developing relational work within the psychosocial department. Here the social worker explains how to the team was working on strengthening its internal collaboration to build common knowledge: "We are now redesigning our work, a new way of working as a pair [psychologist and social worker] and in that context define our roles and functions".

In School 2, where there was a strong dialectic between professional discretion and central direction, the new professionals were able to negotiate their roles with the administration and with the teachers. The psychologist exhibited relational expertise when explaining how they built common knowledge to accomplish the negotiations: "...when another professional comes and tells you your teaching is kind of far from what your students need, it immediately generates antipathy. With lots of work, lots of closeness ... going there, talking with the teachers, we have been able to become quite close".

School 3 exemplified how an overemphasis on central direction may stifle professional discretion, with the loss of the expertise the psychosocial department might have offered. The department was isolated within the school, neither navigating nor negotiating school practices. Instead, they exhibited limited professional agency, mainly receiving, processing and making referrals. The psychologist explained: "The expectation [is that we] work with cases that are referred because

of different problems [identified by the teachers]...to refer them to external agencies". There was little collaboration or common knowledge either between members of the department or with teachers.

School 4 showed the potential for a dialectical relationship between direction and discretion but required the new professionals to build the institutional coupling in a way that might allow them to work on diversity, rather than follow the teachers' demands for clinical work with students. Consequently, the new professionals were sometimes resisting but also navigating the rules that shaped school practices. The psychologist explained: "When you come to work here you need to understand the culture, and that culture impacts you because you have to constantly adapt...but I must do that otherwise we could not move forward". The coordinator indicated the work is underway to develop stronger coupling through the building of common knowledge, where they were clear about their motives, "...our role has not been made explicit and that too is our responsibility; that is why we spend so much time socialising [within the department]... we make our own goals so we can show our work later".

In each school the new professionals sustained their sense of what mattered to them as professionals and what they could potentially offer the school. But, with the exception of the new professionals in School 2, they were all some way from negotiating responsively and relationally with school staff. The problem appeared to be differences in motives between the new professionals and the teachers, which in turn shaped how the complex problems presented by vulnerable children and young people were interpreted. For example, in School 4 teachers wanted the students to be "fixed" through clinical interventions, while the new professionals believed that a whole school response to diversity and vulnerability was needed. The more successful joint work in School 2 was helped by how the school was led, but it is also important to note how the new professionals took advantage of the school's competence framework to exercise relational expertise and build common knowledge about what mattered for them and for the teachers and administration. Efforts at building common knowledge were observed in School 1, where creating coupling through building common knowledge was also evident. Similar processes, though to a lesser degree, could also be found in School 4, where the new professionals worked primarily with the administration while trying to resist the teachers' focus on fixing the children. The isolation of the new professionals in School 3, in contrast, provided little opportunity for creating common knowledge with school staff and no evidence of opportunities to exercise relational expertise with the staff.

12.5.2 What Demands Were Recognised by the New Professionals in Their Work?

Responses to the second research question offer insights into what mattered for the new professionals: their professional motives as they attempted to negotiate their expertise into school practices or navigate them in ways that would support students. Our analytic premise was that the new professionals would identify challenges or demands that reflected what was important to them. In School 1 the efforts made to develop values-led coupling and build common knowledge were recognised by some teachers, and demands came directly from these teachers. The psychologist explained: “One has to support the teacher, because the teacher is in the classroom with the students, therefore that is the bond you have to strengthen first [before that with the student]”. A similar focus on work in the classroom was found in School 2, but here there was more evidence of a joint focus on the student. The psychologist elaborated: “...when you focus on students your agreements or disagreements [with school staff about demands on the new professionals] move to the back ... if a teacher wants me to talk with a student who is crying and creating disruption in the classroom, I humanise the case”. As might be expected, the demands on the new professionals in School 3 were seen to be very different, working outside the classroom with parents and other agencies and tackling what others in the school could not “[the focus is on] assessment of aspects that teachers and school counsellors cannot address” (psychologist). In School 4 there were conflicts in the demands identified and resistance to teachers’ demands to fix the child. The coordinator reported that the department “was created with the idea of having a team that could support the system, not just the student... the whole high school at a more macro level”. The psychologist reflected on these demands “I think it is important to have a psychologist in the school, but coordinated with a systemic perspective with many professionals working”.

In all of the schools, the new professionals were identifying demands, and their responses were creating different ways of working and being a new professional. They were all working with different degrees of agency, navigating or negotiating demands within the opportunities for action available to them. As Leont’ev explained “society produces the activity of the individuals forming it” (Leont’ev 1978, p. 7). They were contributing to very different school cultures and approaches to the well-being of young people, which in turn were shaping their actions in activities and the nature of their work.

12.5.3 What Relational Resources Did They Use When Collaborating with Others?

In School 1 prior to the appointment of the new principal, seeing the psychologist was a punishment for misbehaviour. The new professionals were therefore keen to build common knowledge, knowledge of what matters in each professional practice as a resource in their work with teachers. Here the psychologist gives a classic definition of constructing common knowledge across different practices: "...the ideal is to build with the teacher first an understanding of each other's work, but also to talk about how each understands the students, because as it turns out each one positions themselves from their own world view". In School 2, where institutional support for the new professionals was clearest and where common knowledge was being built, we found evidence of a capacity for relational agency, where the professionals recognised they were resources for each other. The psychologist explained:

I felt very fortunate when the social worker arrived, to know he is by my side, I can enter his terrain and he tells me "you are right, but I look at it from this other perspective." And he enters mine... there is trust within the team. That has been enriching because one learns from other points of view and that enriches your own.

He also talked of creating similar relationships with teachers: "it has been very gratifying the closeness we have achieved [with teachers], which allows us to enter the classroom". School 3 discussed resources in terms of passing on information about students, with responses detailing procedures and protocols. They recognised that more joint work was needed, but it was couched in terms of gathering more information to inform referrals. "You cannot refer to an external agency if you do not know the case well" (social worker). In School 4 the lack of role definition appeared to hinder building common knowledge or developing a capacity for relational agency. As in School 3, there was some emphasis on using procedures and protocols "a lot of bureaucracy" and a separation between teaching staff and the new professionals. But, as we have already shown, efforts were being made to erode these barriers and build common knowledge as a resource that would mediate collaborations over vulnerable young people: "we work with all home room teachers and also individual work with teachers when they approach you and ask for advice... for example, the leadership workshop was spontaneous" (social worker).

12.5.4 How Did the Iterations of Person and Practice Shape the New Professionals' Sense of Their Own Agency?

In addressing the question, we return to Roth's observation that agency unfolds in people's acts in the actions in activities within institutional practices and frequently has a moral dimension (Roth 2006). We have used the term sense of their own agency to reflect this moral commitment to what is important in professional actions

as well as a sense of effectiveness in taking forward intentions successfully (Taylor 1977). As we have already indicated, we see institutional practices comprising activities, in which people take actions, which are motivated and shaped by how they interpret the task being worked on in the activity. This definition places practice, activity, motive and action in line with Leont'ev's view of the continuing dialectic between self and society. It also allows us to examine activities and intentional motivated actions within them, in order to reveal the exercise of professional agency.

All the new professionals attempted to make sense of the demands they met, but even in School 2, they were not working alongside others who were expert in the new forms of work encouraged by SEP funding. Nonetheless School 2, operating with a robust values-led dialectic between central direction and professional discretion, did enable the psychosocial department to both develop its own collective agency and to negotiate with other school staff in order to accomplish the discursive shift and the kind of new negotiated order mentioned by Engeström (2008). This comment from the psychologist gives a flavour: "... I have not been told what to do, we have built a role in the school, we have defined what we as a team will do". The new professionals introduced team meetings with teachers in each grade, the psychologist continued: "...the activity has spread and now all specialists meet with their grade level teachers once a month". The agency of the new professionals was encouraged, and they exhibited clear signs of relational expertise, the construction and use of common knowledge and the exercise of relational agency in their moves towards systemic changes.

Schools 1 and 4, both loosely coupled schools in relation to psychosocial work (Orton and Weick 1990), offered similar profiles of professional agency with an emphasis on navigation rather than negotiation, but there were differences primarily due to differences in school leadership. In both schools the new professionals had clear mandates, reducing dropout and supporting teachers working with a diverse intake, respectively; in both schools the teachers held outmoded ideas on the new professionals' work; and in both schools the new professionals worked at creating common knowledge with teachers or administrators to mediate their specialist expertise into collaborations to support vulnerable students. But while the principal in School 1 welcomed and encouraged their efforts, the principal in School 4 had yet to engage with the department's work, putting them in the position of needing to resist the teachers' focus on clinical work, while trying to take forward a more collaborative approach to supporting students. Both departments allowed the individual agency of the new professionals to be exercised and common knowledge with school staff to be built, but while School 1 encouraged the new professionals in building collective agency and influencing the school and its practices, lack of leadership in School 4 positioned the new professionals so that they needed to work against the grain of the motives in existing school practices.

The length of our study did not allow us to examine longer-term implications of these slightly different conditions for the formation of the new professionals as practitioners. But, in both schools, their agentic commitment to constructing common knowledge in order to mediate their intentional actions and work relationally revealed their agency as it unfolded in the new forms of work they were beginning

to create. The situation was very different in School 3. There, heavy central direction led the new professionals to need to assert their competence to the coordinator. But these efforts were in vain, and they exercised limited agency through making referrals by following protocols. They appeared to maintain their sense of professional commitment by being critical of school staff, making it unlikely that common knowledge could be built and relational work accomplished.

12.6 Reflections on Building the Capacity for Joint Work

Relational work requires recognition of what matters in one's own specialist practice and a commitment to the values that shape the practice. This attention to motives and commitment to professional values was evident across all four sets of new professionals. However, following Taylor (1977) on agency, our view is that professionals develop through agentic actions, which enable them to meet the goals they set themselves and to be responsible for evaluating for themselves whether they have achieved them. This strong agency was found in Schools 1, 2 and 4, but in School 3 it was lacking. Unable to develop this strength of agency, the new professionals in School 3 could not resist the limitations placed on their work.

Here cultural-historical attention to the dialectical relation between person and practice has helped. Our distinction between navigation and negotiation links the exercise of agency to the affordances of the environment. Where there was the potential for fruitful tensions between institutional coupling and professional discretion (Schools 1 and 4), we observed careful navigation in preparation for later negotiation; while where that tension already existed (School 2), the new professionals' agency was evident in negotiations.

We suggest that a strong sense of agency is simply the starting point for the capacity for relational work. Working relationally across practice boundaries on complex problems involves professionals in recognising and working with the motives of potential collaborators and making what matters in one's own practice explicit, so that others can engage with it. It also involves attention to how institutional practices are configured and the spaces for professional discretion. Our concern with motive, what matters in a practice and the unfolding of agency as motives are enacted in figured worlds of practices is intended to encourage a focus on both professional agency and the conditions in which it may thrive. We hope that this dual and frequently shifting focus offers insights into how valuable professional expertise can be recognised and brought into play when dealing with complex problems, like those faced by the four schools in this study.

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Chapter 13

Professional Agency and Creativity in Information Technology Work

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13.1 Introduction

The meaning of professional agency in the context of professional learning, as well as in the development of working practices and work organisations, has been found to be pivotal (Billett 2011; Eteläpelto et al. 2014; Forsman et al. 2014; Harteis and Goller 2014; Tynjälä 2013). The role of creativity and innovation has also been found to be crucial for long-term economic growth in the current global environment, which is characterised by rapid changes in both technology and economy (see e.g. Oddane 2014). As organisations require innovative solutions, the implementation and investigation of the social settings that foster the agency of both individuals and communities with regards to professional learning, development and creative practices are vitally important (Vähäsantanen et al. 2017, this volume). Further, the relationship between creativity and agency has been discussed and questioned, with the relational nature of both phenomena being underlined (Glăveanu 2011). Overall, it can be argued that supporting both creativity and agency in the workplace can be understood as a process whereby individuals can express and share their opinions with their work community, as well as proposing ideas for the development of working practices within their own work communities.

Although questions concerning professional agency and creativity are becoming increasingly more pressing, the question of what exactly is meant by these concepts still remains largely unanswered (Glăveanu 2011, 2015). Thus, there exists a clear need to study the relationship between professional agency and creativity. Previous

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studies concerning professional agency and creativity (e.g. Dumas et al. 2016; Eteläpelto et al. 2013; Rahman et al. 2016) have principally focussed on theory development and modelling; hence, both context- and situation-sensitive empirical evidence concerning both phenomena is still lacking in relation to how they become manifest in everyday work. We also need – perhaps even more so – to understand the relationship between the two phenomena. In this chapter, we aim to offer new ideas and perspectives on these closely linked phenomena, as well as on the nature of their interconnectedness, on the basis of empirical data derived from organisations in the information technology (IT) sector.

As part of a larger research project, namely “CREANCY” (Leadership as an enabler of creative professional agency within information technology organisations), our aim in this chapter is to investigate and discuss the relation between professional agency and creativity. This is achieved by investigating how professionals perceive and understand creativity in the context of their everyday work. Additionally, we explore the different manifestations of professional agency that can be found in the professionals’ descriptions of their everyday creative work. Our empirical data are drawn from the field of information technology, where creativity, innovation and professional agency are of central importance (Ulrich and Mengiste 2014).

13.2 Theoretical Standpoints on Professional Agency and Creativity in Working Life

13.2.1 Professional Agency in Working Life Contexts

Over the past decade, the multifaceted concept of agency has gained increasing currency in the fields of education and learning sciences, especially within the context of workplace learning (e.g. Billett 2006; Fenwick 2006; Hökkä et al. 2012). Professional agency has very positive connotations for both innovation and creativity (Glăveanu 2010; Littleton and Miell 2004), as well as for motivation, well-being and even happiness (Welzel and Inglehart 2010). Agency is also seen as connected to individuals’ autonomy and self-fulfilment, acting as a force for change and for resistance to structural power (Casey 2006; Fenwick and Somerville 2006). Indeed, in its most active and positive forms, professional agency can be seen as individuals’ creative initiatives with regards to the development of existing working practices (Littleton et al. 2012; Paloniemi and Collin 2012; Sawyer 2012; Messmann and Mulder 2017, this volume). However, professional agency can also manifest in seemingly less progressive and positive ways, for example, adopting a critical stance or entering into a struggle against reforms suggested from the outside (Fenwick 2006; Vähäsantanen and Billett 2008). Furthermore, professional agency can manifest as individual-level action or as something practised within, and emerging from,

a collective enterprise; hence, it can involve participation and collaboration within the work community or within the entire work organisation (Hökkä et al. 2012).

Although scholars conceptualise agency in different ways, within the fields of professional learning and working life studies it is usually related to choices and intentional actions in relation to work-related matters (Eteläpelto et al. 2014). Some tend to understand agency as a capacity or disposition that enables individuals to *make choices* and initiate actions in order to control their self and their environment (Harteis and Goller 2014; Kristiansen 2014). In contrast to conceptualising agency as mainly an individual capacity, professional agency has also been understood as a behavioural phenomenon accompanied by actions (e.g. Priestley et al. 2012). In this case, professional agency is understood to be practised *when professionals or communities influence, make choices and adopt stances in relation to their work and professional identity* (Eteläpelto et al. 2013). Thus, as a starting point for this study, we conceptualise professional agency more as what individuals do rather than as an individual characteristic or capacity (see Goller and Harteis 2017, this volume). Further, we recognise that it can also emerge as a collective endeavour. However, on the basis of the data-driven empirical analysis, we cannot conclusively state that this will be the final interpretation. Furthermore, the practice of agency in terms of individuals' active participation in social practices is considered to be the locus of learning and development processes (e.g. Goller and Billett 2014; Smith 2012). In addition to perceiving professional agency as a behavioural phenomenon, it is also viewed as *an outcome of learning* (Tynjälä 2013).

Following Glăveanu's (2015) reasoning, we underline the relational and situational nature of professional agency (Edwards et al. 2017, this volume). Theories of agency often ignore the contextualisation of agency and the many forms in which it is manifested. We are, as professional actors, agents in various ways and our action is always situated socially, symbolically and materially. Thus, professional agency can manifest in several ways within work contexts and, further, for several purposes in everyday practices and processes. If we consider the notions of creativity and professional agency to be intertwined and embedded within social practices found in work communities, understanding agency in the context of creativity in the workplace becomes key. In this chapter, we investigate professional agency in relation to creativity as constructed and described by the IT professionals (employees and leaders) themselves.

13.2.2 Creativity at Work

The concept of creativity is a multifaceted construct and thus it lacks satisfactory framing (Anderson et al. 2014; Sawyer 2012). In this chapter, we lean on the creativity research, as well as approaches derived from the social sciences and organisation and leadership studies (see Runco 2014). From these perspectives, the definition of creativity includes the aspects of novelty, value and usefulness (Anderson et al. 2014). Creativity is also seen as important for business and the

production of novel work; it is particularly necessary for increasing value across different tasks, occupations and industries (Oddane 2014; Shalley and Gilson 2004). In this chapter, the focus is on the emergence and various manifestations of creativity in practice: *we see creativity through working practices, as an everyday phenomenon feasible for all*. We highlight *collective creativity* without denying the crucial role of individual contributions to creative processes (see Forsman et al. 2014).

Our context for creativity is IT work, a field where both creativity and a capacity for innovation are of central importance (Ulrich and Mengiste 2014). Recent studies in this area have included model testing or theories of creativity (e.g. Dumas et al. 2016; Rahman et al. 2016), as well as the creation of new models/theories based on data derived from large empirical samples (e.g. Agnoli et al. 2016; Kim and Shin 2015). While the majority of the prior research has focused on individual creativity (Anderson et al. 2014), attention has also been paid to collaborative processes and problem solving (e.g. Fischer and Shipman 2011; Hargadon and Bechky 2006; Wiltschnig et al. 2013). Further, multiple studies have investigated the factors that enhance or constrain employees' creativity (e.g. Rosso 2016; Shalley and Gilson 2004).

Creativity has often been seen as a linear and "individual/collective" process in which individuals only play a role at the start of a collective process (Oddane 2014). However, this understanding overlooks the complexity of creative endeavours conducted in real-life settings (Hargadon and Bechky 2006). Oddane (2014), for instance, argues that creativity develops through a messy, complex progression of events, while creativity itself is an uncontrollable, emergent process wherein people have to explore, experiment and play with possibilities without precisely knowing how their efforts will unfold. In practice, people continually deal with complexity, uncertainty and the "unexpected" in the form of, for example, unanticipated changes, tight schedules and the variable expectations of customers. Creative problem solving can also be seen as a learning process. Particularly in the field of technical design work, learning (and creativity) is perceived as shared problem solving and the development of new solutions tailored to meet customers' needs (Collin 2002, 2005). *We are interested in how creativity is manifested in authentic IT working practices, which are strongly project-based*.

Creativity as an Individual or Collective Entity The human capacity to produce novelty and change is argued to be vital for any understanding of nature and society (Glăveanu and Sierra 2015). In order to sustainably create more inclusive and fair societies, both individual and collective creativity are needed. However, the leading contemporary definition of creativity is predominantly Western, being often understood as the mental processes of individuals rather than broader social processes and "a form of action aimed at transforming self, other and environment" (Glăveanu and Sierra 2015, 345). According to the sociocognitive approach (Glăveanu 2011) to collective creativity, the starting point is the notion that creativity is embedded within individuals' minds and the social aspect is seen as external. Thus, the possibility for a group or team to be creative is limited. It should be possible to measure group or team creativity (in laboratory settings), while the outcome should somehow

be embodied and, at the same time, strongly contextualised. Yet, organisations rarely innovate in isolation, but rather in collaboration and interdependence with other organisations and actors in order to gain, develop and exchange various kinds of knowledge, information and resources. The individual/collective dichotomy ignores the fact that real-life problems are often so complex that it is unlikely any single individual could possess all the knowledge required to deal with the challenge(s) at hand (Hargadon and Bechky 2006).

Glăveanu (2011) criticises the sociocognitive approach and develops an alternative, namely a supplementary *socio-cultural approach*. According to this approach, creativity is considered to be social in nature and located in a space between the self and others. More important than the individual alone is the role of activity and social practices, as well as the co-construction of knowledge and practices through social interaction. Collaborative creativity thus takes place in a *representational space* in which individuals use symbolic resources and communication to generate new and useful artefacts. For each individual, there exists a personal representational space guided by a broader cultural frame. At the same time, within a collaborative situation, individuals communicate and therefore build a common representational space. In this space, group dynamics are exhibited and different thinking styles collide, which sparks the creative process. This ideal situation is possible so long as members communicate with one another, do not withhold information and allow the free flow of ideas. Therefore, compared to the sociocognitive approach, the socio-cultural approach emphasises the role of exploration and sharing in the various contexts of working practices. *In this chapter, creativity is approached as manifestations of creativity, for example, actions, products and creative processes.*

13.2.3 Bridging the Gap Between Creativity and Agency in Working Life

From the viewpoint of learning, professional agency focuses on professional practices, while its manifestations can be seen as creative initiatives implemented by employees in order to develop existing work and transform both work structures and the course of activity (Billett 2011; Engeström 2011; Forsman et al. 2014; Paloniemi and Collin 2012). This kind of transformative agency (see Collin et al. 2015b) can be practised through individual or collective actions. More specifically, the agentic actions for learning include the development of ways of working, creation of innovative working practices, addressing of tensions within working practices and questioning the existing course of activity (Harteis and Goller 2014; Vähäsantanen 2015). However, professional agency can also be manifested in ways that are less proactive and developmental (Priestley et al. 2012), for example, reproducing professional practices and resisting calls for change (Sannino 2010; Tomlinson et al. 2013).

The above description of (transformative) agency implicitly suggests that agency includes creativity. However, the relationship between professional agency and creativity lacks both theoretical discussion and empirical evidence. Thus, we do not have sufficient empirical evidence as to what kind of relationship actually exists, or to connect the two concepts into one, namely creative agency. However, one empirical study has been conducted among project coordinators with middle-managerial roles (Swan et al. 2016). Through these liminal roles, the concept of creative agency seemed to be important for the development of survival and navigation strategies within the coordinators' work. Creative agency is necessary, since individuals need to perform in different "stages" of their changing work responsibilities in order to stimulate novel practices and combine new and existing ones (Swan et al. 2016). However, Swan et al. (2016) did not define creative agency in their study.

Multiple questions seem to remain open in the literature concerning both creativity and agency. According to Glăveanu (2015), the following questions at least are central in terms of the interrelatedness of creativity and agency: Are creativity and agency the possessions of individuals or collectives? Should they be conceived as the complete or restricted freedom to act and do something? Can agentic and/or creative actions be responsive and passive, or should they be understood as expressive and supportive in nature? In the context of work, the intertwined relationship between creativity and professional agency in relation to working practices becomes multidimensional. Therefore, should the relationship be understood as uni- or bidirectional, or contextually and situationally either-or? More concretely, does professional agency promote creativity in certain situations, while professional agency is an outcome of creative actions in other situations? Is professional agency necessary for all kinds of creative practices or, vice versa, can there exist agentic practices that are not creative?

Although it is not possible to answer all the above-mentioned questions in this chapter, the socio-cultural approach to creativity and professional agency does seem to offer one promising path for bridging the gap between creativity and agency in working life contexts: conceptualising agency and creativity as interrelational phenomena that take place between the individual and the collective. In this chapter, these two concepts are therefore approached as connected in one way or another. Deriving from the theoretical discussion presented in this chapter, the methodological approach to investigating professional agency and creativity used in this study is ethnography. More precisely, the focus is on real-life working practices and the understanding and meaning professionals ascribe to creativity in their work. Further, in terms of the intertwined relationship between creativity and agency, we investigate the manifestations of professional agency seen in the professionals' perceptions of creativity.

13.3 Research Aim and Research Questions

There have been relatively few empirical and qualitative studies of the relationship between professional agency and creativity in the workplace. In this chapter, we explore professional agency and creativity within two Finnish IT organisations: “*Machine*”, a large internationally networked organisation operating in the field of machinery software and devices, and “*Software*”, a young domestic software development subcontractor with about 200 employees. The study presented in this chapter aims to answer the following research questions:

1. How do the IT professionals in this study perceive and understand creativity at work?
2. What manifestations of professional agency can be found in the IT professionals’ descriptions of their everyday creative work?

13.4 Data and Analysis

13.4.1 Data

This study’s data are derived from a Finnish ethnographic research and development project implemented within the domain of information technology work. The project aimed to investigate the meaning of leadership within work organisations in relation to creativity and professional agency in everyday work. Two IT organisations – Machine and Software – participated in the project between 2015 and 2016. *The data utilised in this sub-study consist of thematic interviews (n = 34) and open-ended questionnaire responses (n = 89) given by participating IT professionals from the two organisations.*

Of the 34 interviews conducted, 15 were held with staff members from Machine and 19 with those from Software. The duration of these voluntary interviews varied between 15 and 70 min, and they were conducted as part of ethnographic fieldwork within the organisations. Based on the interviewees’ wishes, the available facilities and issues of convenience, the interviews were conducted in either meeting rooms, private offices, public spaces within the organisations or outside cafeterias. Thirty-two of the interviews were individual interviews, while two were pair interviews due to practical reasons. The justification for this amount of data was saturation (Patton 2002). The interview themes covered everyday work in the field of information technology: daily working practices, sources of motivation, challenges, creativity, leadership and opportunities to exert influence. The interview data (a total of 1514 min of audio recordings) resulted in 472 pages of transcribed data.

As part of the CREANCY project, an electronic questionnaire concerning professional agency, creativity and leadership was sent to employees of both participating organisations in December 2015. A total of 288 people (108 from Machine and

180 from Software) received the questionnaire. Altogether, 93 people (32.3%) responded, 55 from Machine and 38 from Software. Even though the overall response rate in the questionnaire study turned out to be rather low, the number of respondents from both organisations was representative of the organisations' staff profiles. The questionnaire was intended to collect a broader scope of staff perspectives than could be achieved through the ethnographic fieldwork. The portion of questionnaire data utilised in this sub-study includes a total of 89 open-ended responses to the following question: "What is creativity in your work?". Fifty-two participants from Machine (95%) and 37 from Software (97%) responded to this question. The qualitative descriptions provided by the respondents resulted in a total of five pages of data.

13.4.2 Analysis

In this study, empirical data consisting of the two above-mentioned datasets were utilised in conducting a qualitative thematic analysis (e.g. Braun and Clarke 2006). The data-driven analysis aimed to answer the first research question by identifying qualitative themes that describe the participants' perceptions and understandings of creativity within their everyday IT work. Regarding this first research question, all quotes pertaining to creativity were first extracted from the interview data. These quotes and the open-ended questionnaire responses were then carefully read by all the authors. The insights of all the authors were compared collectively and five themes describing creativity were eventually identified: (1) sustainable problem solving, (2) creation of novelty, (3) development of work methods, (4) state of mind and attitude, and (5) freedom and autonomy at work. Section 13.5.1 describes the themes of creativity in more detail.

The second research question focused on the emergence of professional agency within these qualitatively different understandings of creativity. Thus, at this stage of the analysis, we approached the five themes of creativity (research question one) in terms of professional agency. In doing so, we utilised the theoretical notions and definitions of professional agency found within the existing literature. Due to our ultimate aim of investigating the relations between creativity and professional agency in everyday work, we sought to expand this understanding by exploring the similarities and differences in data-driven understandings of creativity and theory-driven definitions of professional agency. Here, we specifically concentrated on professional agency manifested as choices regarding individual's work and working practices. In this analysis, we consider choices to refer to how the professionals talk about their choices and decision making in relation to their work.

The findings are presented as a condensed blend of both the interview and questionnaire data, while authentic data extracts from both datasets are included in order to enliven and validate the findings.

13.5 Findings

We set out to explore how creativity at work is perceived by IT staff, as well as how professional agency is intertwined with those perceptions of creativity. In this section, the findings will be presented according to the research questions. First, we will describe the various ways the participants perceive creativity in their everyday work. Second, we will reveal different kinds of manifestations of professional agency within the IT professionals' descriptions of their creative practices. As we have learned from the theoretical conceptualisation, these two concepts might be homologous, at least partially. Thus, we will also interpret how the concepts of creativity and professional agency are related to each other.

13.5.1 *Creativity in IT Professionals' Work*

Our first research question focused on the various perceptions of creativity within IT professionals' everyday work. By means of a data-driven thematic analysis, five perceptions of creativity were identified from the data: (1) sustainable problem solving, (2) creation of novelty, (3) development of work methods, (4) state of mind and attitude, and (5) freedom and autonomy at work. The understanding of creativity was found to vary depending on, for example, the work tasks at hand, the customers and their role in defining the course of the development project. Further, creativity in everyday work was said to take place at both an individual and community level. Next, the various themes of creativity identified within the IT professionals' work are described in more detail.

13.5.1.1 Sustainable Problem Solving

First and most commonly present in the data, creativity at work was perceived as various kinds of problem solving. Creativity was described as the ability to solve problems, a process of problem solving and the pinpointing of problems and challenges. In particular, creativity as problem solving was described as the discovery and application of sustainable and transferable solutions – not just in the project at hand, but also more broadly in the future and according to customer needs. Creativity as problem solving was also described as the ability to identify and select the best possible solution to a given problem.

To start with, one always attempts to do something that has not been done before: if it had been done before, one could use it and solve the next problem. Creativity is seeing the links between issues. – Software staff member

The sustainability of problem solving was considered to be the sum of various aspects: creativity was described as the formulating of sustainable solutions in such a way that multiple viewpoints are taken into account. In terms of problem solving,

creativity is multifaceted and essential for seeing totalities, as the next extract illustrates:

Creativity is the ability to use tools in a versatile way and complete the work efficiently so that it also serves future needs, not just the demands of this moment. With creativity, one can materialise more versatile solutions with less (total) work. – Machine staff member

In terms of creativity as problem solving within IT work, one participant emphasised their understanding of creativity as a comprehensive process, while another participant highlighted the role of individuals' problem-solving abilities.

13.5.1.2 Creation of Novelty

Second, creativity was described as the creation of novelty, innovation and discovery. The creation of novelty particularly pertained to the creation of a new product, whether it be a programming language or a machine, according to customer needs. Product development was closely related to problem solving: both were strongly defined by new definitions of problems stemming from customer needs and, through this, the design of new products. The aim of product development is to make even better things in the future, as the next extract points out:

There are, of course, existing solutions that are applicable in a number of situations, but you often build something completely new. – Software staff member

Creativity as the creation of novelty entails experimentation, invention and improvisation. One's own courage to seek out new ways of working and solving problems is essential, as is the ever-better development of a product's functionality and usability from the customer's point of view.

13.5.1.3 Development of Work Methods

In terms of the third theme, that is, the development of one's own or the work community's work methods, creativity was primarily perceived as the development of both the work methods and tools necessary to attain a better outcome:

I develop my own ways of working and I generalise them. I develop the automatism of the methods, meaning that in practice I aim to reduce my workload and improve my opportunities for lazing about. – Machine staff member

At its best, the development of work methods leads to an expanding space for creativity. Increasing opportunities for "lazing about" enable and expand employees' freedom to experiment and develop their own work, as well as to identify sustainable solutions to novel issues, particularly in situations where time and resources are scarce. Creativity as the development of work methods also denotes navigation in everyday work, that is, the need to "*try to invent means of surviving with minimal resources*" (Machine staff member).

In sum, the descriptions of creativity at work as problem solving, the creation of something new and the development of work methods, which are all closely related to one another, highlighted the process-like and comprehensive nature of creativity. All three themes entailed both the individual and the collective; further, customers were described as the definers, demanders and originators of creativity. The last two themes highlight an individual's personal, creative state of mind, as well as the roles of the work community and organisation as enablers of creativity.

13.5.1.4 State of Mind and Attitude

Creativity was described by the participants as a personal state of mind, an attitude that is both a prerequisite and an enabler of new ways of thinking in the workplace. In this case, creativity represents an individual's "*new thoughts, modes and matters, which are different than before*" (*Machine staff member*). Creativity at work was also described as the ability to use one's creativity – opportunities and circumstances permitting.

Creativity at work is the freedom to materialise the task at hand in a (good) way that you have chosen for yourself – no process forces you into a predetermined mould. Or actually, creativity is being able to take advantage of that situation. – Software staff member

13.5.1.5 Freedom and Autonomy at Work

Finally, creativity was described by the participants as the freedom to act and materialise creative solutions to the issues encountered in one's work, as well as to respond to challenges. The discovery of creative action, experimentation, identifying new solutions, responding to customer needs and the development of one's own actions and professionalism are all enabled if an employee has the freedom to act independently. This also denotes permission to make mistakes.

A big part of the work is being creative: not once has the boss told me what I am allowed to do or what I should do. – Machine staff member

However, the freedom to experiment and be creative in one's work was considered to be either occasionally or continuously limited, depending on, for example, the situation and the individual. Extreme haste, tight project schedules, an immense workload and the scarcity of resources were, in particular, experienced as restricting. These aspects somewhat force individuals to be creative, but they also strongly restrict creative work – even when creative work is desired by the organisation.

13.5.1.6 Summary

The perceptions of creativity identified within the data reveal that creativity in IT professionals' work is understood as processes of work, individual entities and social constructions and structures. The first three themes of creativity (problem solving, creation of novelty and development of work methods) were most commonly present in the data. All these themes share an understanding of creativity as process-like entities that are closely related to the practices of work. Thus, creativity can be understood as a way of working or as a working practice. The last two themes approach creativity more from the viewpoint of an individual person or the social structure and, compared to the first three themes, they were not that frequently present in the descriptions given by the IT professionals. The perception of creativity as a state of mind or attitude underlines the importance of the individual (or the collective) in being creative. Thus, creativity manifests if an individual has the will to be creative and hence opens his/her mind to creative ideas. The perception of creativity as freedom and autonomy at work turns the focus towards the social context and the structures found in the workplace (the work organisation and the organisation of work). Thus, creativity is here understood as the possibility to be independent and autonomous in one's work without being controlled too tightly from the outside (e.g. tasks, ways of working, experimentation).

13.5.2 *Manifestations of Professional Agency in IT Professionals' Descriptions of Their Everyday Creative Work*

After scrutinising the five themes of creativity, our second aim was to explore how creativity and professional agency are related to each other in the field of IT work. Specifically, we asked "What manifestations of professional agency can be found in the IT professionals' descriptions of their everyday creative work?" Altogether, three different conceptualisations of professional agency were identified in the descriptions of creativity. Professional agency was found to manifest as (1) a prerequisite and various phases of creativity, (2) a synonym for creativity, and (3) an outcome of creativity. These manifestations, as well as the choices and decisions made in terms of one's work, will be described in the following section along with a discussion on the relationship between creativity and professional agency.

13.5.2.1 Agency as a Prerequisite and Phases of Creativity

The process-like descriptions of creativity (problem solving, creation of novelty and development of work methods) were manifested in the descriptions of the IT professionals as broad entities consisting of crucial single phases and moments. These

phases and moments denote agency as choices related to tools and work methods, working hours, use of time, collaboration, interaction and learning.

Choices related to tools and work methods. In terms of sustainable problem solving, the creation of novelty and the development of work methods, choices were made in relation to tools and work methods. The central elements were the operations models (i.e. how one works and finds information) used to identify solutions, the exploration of which previous models could feasibly be used again and the development of new models when necessary.

I choose the tools that I work with, so to create new things one can use a slightly different system than that used for testing. – Machine staff member

The bigger problem is divided into a bunch of smaller problems and these smaller problems typically have existing solutions, or at least similar problems have, so one can derive a new solution from there. – Software staff member

Choices related to working hours, use of time and work environment. The use of time and the prioritisation of work phases were also highlighted as essential. For example, the decision to take a break or otherwise momentarily withdraw from one's work was seen as an aspect that enhances problem solving, as well as creation and development processes.

Most times you note that things aren't going anywhere and if you just allow yourself a break... Then again, there are days that you don't allow yourself a break and that rarely leads to any results on that day. – Software staff member

The work is such that you have to build fairly complicated, abstract structures in your head and the maintenance of these structures cannot – at least in my head – withstand any external distractions, noise and such (...) I come to work fairly early, since there's no one here at that time. – Software staff member

Choices related to collaboration, interaction and learning. Also considered central by the IT professionals were choices related to what one could solve on one's own and which aspects of a problem required collaboration with colleagues or customers, as well as which issues required the development of one's expertise.

We consider together what would be the most reasonable way to realise a specific requirement. – Machine staff member

First, you have to kind of structure the problem and think about what the core of it is (...) And, of course, if you come to a standstill at some point, you have to try and describe it to someone else in order to get it structured better. – Software staff member

I just don't have the nerve to ask [for advice] all the time, even though they'd understand that I don't know how to do the thing, I have to learn it (...) try and think it through, then write it down and test it and such. – Machine staff member

Table 13.1 IT professionals’ descriptions of creativity and professional agency

Creativity	Professional agency	Relationship between creativity and professional agency	Individual/collective manifestation
Sustainable problem solving	Selection of tools	Professional agency manifested as both a prerequisite and an enabler of creativity.	Both. From individuals to the collective, as well as first individually, then supported by the community or team.
Creation of novelty	Selection of work methods		
Development of working methods	Prioritisation of work phases Making work practices easier Use of time Modification of the work environment Juggling working hours Exploration (sharing, asking opinions) Seeking information Obtaining information Exchange of information Learning new things		

13.5.2.2 Summary

Creativity as problem solving, the creation of novelty and the development of work methods were described as process-like entities wherein agency is manifested as single phases and moments, that is, choices made by individuals and groups for processes to continue. Choices were made in relation to tools, work methods, work environment, use of time, prioritisation, learning, interaction and collaboration. Professional agency thus manifested as both a prerequisite and an enabler of creativity. The process-like manifestations are summarised in Table 13.1.

13.5.2.3 Agency as a Synonym for Creativity

Creativity was also described as a state of mind and attitude. In this case, creativity can be seen as an individual or group decision to be creative, while creativity as a state of mind or attitude thus manifests as a choice. Choices in this case relate to the positivity or negativity of one's own attitude, experimentation, risk taking, challenging oneself and being open-minded.

Creativity is self-made; it wouldn't be like that unless you made it that way, basically by force. – Machine staff member

You don't cling to old doctrines or to the thought that there's only one correct way of doing things. – Software staff member

The individuals made choices related to their own attitude, which also had an impact on the attitudes of other professionals within the work community. Further, courage and risk taking were connected with attitude.

If you're courageous enough to take a risk during a project and do something different, you can do it. – Software staff member

Challenging oneself was seen as an indispensable choice, since without it the work would potentially not be accomplished. Faith in one's own actions and an open-minded attitude towards new things were also related to challenging oneself.

It would be a waste if you didn't try to challenge yourself. I don't leave work undone because "I can't do it". If I have to test something, I just take it up and start trying. – Machine staff member

The community also socialised its members in an atmosphere that is anti-change and that fosters an appreciation of old operations models.

We have enthusiastic people who produce ideas and want to develop, but everything is always shot down – let's not, we can't, no time – I've noticed that it puts a damper on some people's spirits; they get depressed and do not put their good ideas forward anymore. – Machine staff member

I think that I, too, had more edge in the beginning; I would've wanted to experiment more boldly and I was annoyed as the 'old hands' were always so cautious, but now I've regressed to the same (cautious) thinking. – Machine staff member

13.5.2.4 Summary

Creativity was described as a state of mind and attitude. Hence, creativity can also be seen as a decision. In this case, decisions related to the "quality" of one's attitude (positive or negative), risk taking, tolerance of uncertainty and failure, openness and challenging oneself. The attitude of an individual or group denotes both choices and decision making with regards to wanting to be creative or not. Creativity as a state of mind and attitude is thus a choice, while agency can be seen as a synonym for creativity. These findings are described in Table 13.2.

Table 13.2 IT professionals’ descriptions of creativity and professional agency

Creativity	Professional agency	Relationship between creativity and professional agency	Individual/collective manifestation
State of mind and attitude	Adopting a particular attitude (positive or negative) Risk taking Tolerance of errors Self-confidence Openness	Agency as a synonym for creativity.	Both. From individuals to the collective (e.g. a negative attitude spreads).

13.5.2.5 Agency as an Outcome of Creativity

Choices related to taking responsibility were considered to be central in establishing both freedom and autonomy. Such choices were made based on one’s own thought processes, so the issue of responsibility was also acknowledged. Freedom and autonomy at work were seen to enable independent decision making. Here, creativity manifested also as a prerequisite of agency and, owing to creativity, an individual or group could take responsibility and make choices in connection with their work.

Permission to try various means of improving matters: the quality of work, employee satisfaction, customer satisfaction, learning, one’s own development, etc. The aim is continuous improvement and the experiments do not always have to succeed. At its lowest level, creativity is experimental decision making in relation to matters that possibly also affect others. – Software staff member

You do have the freedom to make, for example, technology-related decisions; you can pretty much decide how you’ll do things. – Machine staff member

Taking responsibility within the work community was described as inherent. Responsibility (along with freedom and autonomy) was not imposed on anyone from the outside; rather, individuals were able to define and decide on the division of work and on who coordinates work and collaboration.

We don’t have the kind of operations model where the supervisor tells us what to do every day or even every week; that this is your part of the work and you have to do this during this week and this and this during the next week, although we do take responsibility for our turf. – Machine staff member

13.5.2.6 Summary

Creativity as freedom and autonomy enabled individuals or groups to make choices and decisions independently and then to act accordingly. Agency thus manifested as an outcome of creativity. Freedom and autonomy at work produced agency, since it

Table 13.3 IT professionals' descriptions of creativity and professional agency

Creativity	Professional agency	Relationship between creativity and professional agency	Individual/collective manifestation
Freedom and autonomy	Taking responsibility Independent decisions (e.g. division of work, collaboration)	Agency as an outcome of creativity.	Both. Increases both individuals' and the community's responsibility.

was a prerequisite for making independent choices and acting accordingly. Agency is autonomy in itself, since an individual's choices represent independent actions. Agency and creativity can thus also be seen as synonymous. These findings are summarised in Table 13.3.

13.6 Discussion

In this study, we set out to explore IT professionals' perceptions of creativity, as well as how professional agency is manifested in these perceptions. Creativity was found to be an essential part of the IT professionals' work (Ulrich and Mengiste 2014), while we identified five themes describing creativity at work: (1) sustainable problem solving, (2) creation of novelty, (3) development of work methods, (4) state of mind and attitude, and (5) freedom and autonomy at work. Further, professional agency and creativity were found to be strongly connected within the IT professionals' daily work. The findings regarding creativity and professional agency in this study were strikingly similar between the two organisations, which is why the findings are described in terms of the phenomena rather than the organisations.

The five themes of creativity seem to be fairly in line with what we already knew from prior studies concerning technology-based and project work: creativity is strongly seen as problem solving (e.g. Fischer and Shipman 2011; Hargadon and Bechky 2006; Wiltchnig et al. 2013) in messy practices (e.g. Hargadon and Bechky 2006; Oddane 2014), as well as the creation of novelty, either by developing new innovations (e.g. Anderson et al., 2014) or new work methods to facilitate fast-paced work. Interestingly, we found that creativity was perceived as a state of mind or attitude in terms of working in the best possible manner to suit every individual professional or group. Creativity was also perceived as freedom and autonomy, which seemed to be a pivotal condition for creativity. In sum, creativity at work was described as working practices, individual prerequisites and social structures (e.g. autonomy at work) within the work community and organisation. Overall, the various manifestations of creativity do not rule each other out in everyday IT work, but instead they overlap and mix in the various tasks. Further, creativity at work is constructed both individually and collectively in working practices.

The exercise of professional agency in IT work occurred as, for example, autonomous decision making, the exploration of new tools and methods, information seeking and sharing, and prioritisation. The manifestations were situationally embedded (Glăveanu 2011, 2015), for instance, depending on whether one is dealing with problem solving, the creation of novelty or the development of work methods. They were also seen to vary to some extent, although there is overlap in the various manifestations of creativity. Choices pertaining to participation, membership and responsibility were central; overall, the making of such choices was seen to enable collective decision making, the creation of new things, problem solving and smooth everyday working practises (see Collin et al. 2015b).

Both individual and collective efforts seemed to be crucial and, depending on the choices in question, the direction from individual to collective or from collective to individual varied. For instance, the modification and development of work tools and methods usually seemed to initiate from an individual's problem solving, but then it spread to and developed within a collegial group. The same developmental process might continue individually just to become more shared endeavour at the later date. By means of suggesting a socio-cultural framework of co-agency, Glăveanu (2015) questions the separation between person and context, as well as the unidirectional form of agency (usually originating from the individual and directed towards the environment). Instead, he argues that agency should be theorised as a bidirectional phenomenon in which all kinds of agentic actions take place within the relational space between the person and his/her social context.

Based on these findings, it appears that creativity and agency are strongly related, although their manifestations depend on both the definition of creativity (process, state of mind and attitude, freedom and autonomy) and the space and environment where the phenomena occur. On the one hand, agency is manifested as a prerequisite for creativity, while on the other hand, it is an outcome of creativity. In addition, creativity and professional agency can also be seen as synonymous. It is obvious, however, that the manifestations of professional agency and creativity are not categorically exclusive, but are rather simultaneously present in everyday practices and, hence, they are only analytically separable. Thus, on the basis of our findings, it appears that we should be open regarding the critical elaboration of definitions of creativity, professional agency and their relationship presented in our theoretical standpoints. This study reveals the different means by which creativity and professional agency can be linked both situationally and contextually. Thus, we were not satisfied with only noting that these two phenomena are interrelated, but also aimed to describe how they are connected. However, our empirical data are not sufficient to make any further interpretations of the relations between creativity and agency. Consequently, more situation- and context-specific examinations of the relationship between these two concepts should be conducted.

What denotes productive agency and creativity for a single individual (e.g. presenting his or her own developmental ideas) might be perceived as unnecessary or even a hindrance by other staff members or the larger organisation. Since professional agency and creativity are context- and situation-bound phenomena, one cannot argue that a single aspect of work unambiguously either supports or restricts

creativity and agency (Collin et al. 2017). However, we suggest that a lack of common representational spaces (Glăveanu 2011) is not favourable for creativity and agency, since these phenomena comprise an inextricable collective element. What thus becomes crucial in work contexts is the possibility to construct shared representational spaces that support creativity and professional agency. Accordingly, there already exists research evidence (e.g. Billett 2011; Eteläpelto et al. 2014) concerning the pivotal role of professional agency in learning and development within work contexts; creativity and professional agency at work are essentially the same as professional development and learning at work with regards to, for example, affordances, willingness to develop oneself, sharing and participation. With the help of our findings, we can demonstrate that agency and creativity represent professional learning at its best. In addition, this kind of learning, which is based on everyday creativity and the possibility to act as a professional agent, is typical of work in the IT sector (see Ylén 2017, this volume).

In terms of generalisability, we cannot argue that our findings are applicable to other contexts as such, although we have tried to ensure the plausibility of our interpretations with the help of both researcher and data triangulation. However, our interpretations pertaining to the relationship between professional agency and creativity are limited due to our qualitative data, which is why further research on these phenomena and their relationship is needed.

As a practical implication, we suggest that the right type of support for creativity and professional agency within organisations is crucial, although what is meant by “right” depends on the interests of organisations, work communities and individuals, as well as situations. It is thus by no means a simple task, since it is necessary to determine how multiple agentic actions and creative insights and efforts can be combined into a working whole (i.e. productive work and satisfied staff). We suggest that Glăveanu’s (2011) common representational spaces are central to this, since they allow various members of an organisation to have opportunities to share and develop their insights, making it easier for a shared understanding to take shape. Supervisors and leaders need to recognise the organisation’s representational spaces and, at the same time, acknowledge the importance of creativity and agency for the well-being of the whole community. For instance, leaders should enable opportunities for exercising the “right” kind of agency so that there is no need to exercise it in secrecy or “backstage” (Swan et al. 2016). Yet, is it necessary to encourage all members of the work community to share their knowledge at all times or is “withholding” information sometimes preferable? To what extent should the various insights within a community be unanimous and to what extent may they diverge (see Collin et al. 2015a)?

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Chapter 14

Learning Occupational Practice in the Absence of Expert Guidance: The Agentic Action of Australian Home Care Workers

Debra Palesy and Stephen Billett

14.1 The Significance of Agency in Socially Isolated Workplaces

Contemporary accounts of learning socially derived knowledge, such as that required for occupations, often emphasise the importance of immediate guidance from more informed and experienced social partners, such as teachers and co-workers (e.g. Brown and Palincsar 1989; Collins et al. 1989; Gherardi 2009; Hughes et al. 2013). Yet, the changing nature of work participation, including more work being conducted in relative social and/or geographical isolation (e.g. working from home, shift work), means that much of our learning for work today occurs in the absence of such partners (Billett 2010; Billett et al. 2003). Consequently, there must be ways of learning the knowledge and skills required for occupational practice without close and expert guidance. Central to such considerations is the significance of the relationship between the social contributions to and personal practices of the individual in that learning.

Learning the requirements for a new occupational role can be challenging at any time, but perhaps even more so for those who work without direct supervision and support. From their very first day “on the job”, workers in these situations are required to personally direct and manage the actions and interactions that comprise their workplace learning. Such practices are proposed as “agentic actions” and the

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process by which individuals critically evaluate and choose these actions and level of engagement as “agency” (Billett 2006). Socially isolated workers might also be described as requiring particularly agentic personal epistemologies (i.e. ways of knowing, thinking and acting), as they self-manage their learning, develop their unique worker identities and enact their occupational practice, all in the absence of expert guidance. These circumstances call for resourcefulness by workers and work organisations if they are to learn and work productively and safely. For individual workers, unique actions and learning practices may be required, while for work organisations, a degree of flexibility may be required in finding creative and collaborative ways of supporting learning of their isolated workers.

In this chapter, the particular focus for examining agentic action in the absence of expert guidance is a group of Australian home care workers (HCWs), who are required to transfer and adapt classroom-taught manual handling skills and knowledge to their workplaces. These workers do not have the close support and guidance of more experienced colleagues, as they conduct their practice in the privacy of their clients’ homes. Instead, they are expected to complete the (often novel and challenging) tasks that comprise this role in relative social isolation. The discussion in this chapter draws upon a recent investigation of a small cohort of newly recruited HCWs from an Australian home care organisation. The 14 informants recruited for the investigation comprised both males and females varying in age, cultural background and life (including previous education and work) experience. For purposes of confidentiality, all informants, and the organisation, were assigned pseudonyms. De-identified qualitative data were obtained in the form of direct observations of workplace practices and semi-structured interviews. These data aimed to capture ways in which new workers were adapting their classroom manual handling training to their relatively socially isolated workplaces (i.e. clients’ homes) and to understand how best to support these workers to learn and enact safe home care practices. A more detailed description and justification of the methods and procedures used for this study can be found in Palesy (2015).

Principally, this chapter is concerned with elaborating the kinds of agency and agentic action deployed when learning socially derived knowledge (i.e. occupational competence) in the absence of expert guidance. However, the aim of this chapter is also to propose practical ways for organisations to support learner agency and achieve effective learning for their staff who work and learn in the absence of expert guidance. This aim is realised through, firstly, considering the nature of home care work and the existing training provisions for new workers. This is followed by a discussion of how personal subjectivities, such as dispositions, intentionality and agency, shape learning for work. These subjectivities, which are held to go beyond the individuals’ sense of self and include the action of that self, are then presented and discussed in light of how HCWs in this inquiry exercised agentic action. The chapter concludes with some recommendations for the best ways of progressing the learning and development of workers who conduct their practice in the absence of direct supervision and support.

14.2 Working and Learning in Australian Home Care

The Australian population is ageing, in keeping with global trends (ARC Centre of Excellence in Population Ageing Research [CEPAR] 2014a; Quinn et al. 2016). In 2014, 15% of Australians were aged 65 and over, compared to 8% in 1964. Moreover, in the past 20 years there has been a ninefold increase in the number of people aged 85 and over, up to 1.9% of the population in 2014 (Australian Bureau of Statistics [ABS] 2015). This demographic change is driving the need for healthcare at an unprecedented rate (CEPAR 2014a). Home-based health and social care models, in particular, are becoming viable options for aged care policymakers, as they promise greater cost-efficiency and respect the preferences of an increasing number of people to receive formal care in their own homes (CEPAR 2014a; Craven et al. 2012). Consequently, paid HCW jobs are growing in demand.

Today, a complex web of financial arrangements provides the funding for home and community-based care in Australia. Responsibilities for this provision fall to Commonwealth, State and Territory, and Local Governments, private funding agreements, and community (not-for-profit) organisations, all offering care to people suffering chronic illnesses, disability or physical and cognitive decline. This fragmented allocation of services lends itself to problematic regulation and coordination (Clark and Lewis 2012). Across all systems, however, the home care sector is one of Australia's largest employing industries (Australian Institute of Health and Welfare [AIHW] 2013). Approximately 350,000 staff are employed in the sector, with a projected requirement of 830,000–1.3 million workers by 2050 (CEPAR 2014b). So, issues with the regulation of home care work combined with exponential growth highlight the need for effective education and training initiatives to improve the quality of home care work and support HCWs in their roles.

Home care assists individuals to live as independently as possible in their own homes and communities. The rapid expansion of this sector in Australia, combined with a chronic shortage of qualified nurses, has resulted in the majority of this work being performed by lower-skilled workers (Australian Nursing Federation 2009; CEPAR 2014b). These workers assist with basic activities of daily living (e.g. mobilising, bathing, toileting, shopping, meal preparation) and more advanced tasks (e.g. medication administration, tube feeding, urine drainage, operation of technology such as electric wheelchairs and mechanical hoists). These tasks all involve a degree of manual handling. That is, they require workers to use parts of their musculoskeletal systems to lift, lower, push, pull, hold, carry, move or restrain an object, load or body part (Australian Government, Australian Safety and Compensation Council 2007). As such, manual handling stands as an activity that HCWs need to understand and be able to enact in ways that are safe both for themselves and their clients and usually comprises part of a new HCW's orientation to their role. In sum, home care work represents a challenging and diverse set of activities that require the application of skills in different ways, purposes and circumstances, all without direct supervision or support.

The Australian home care workforce consists mainly of female, middle-aged, entry level workers (ABS 2014; CEPAR 2014b), who are often from ethnic minority groups (AIHW 2009). These workers tend to be casual or part-time and earn below the average national wage (ABS 2014). Moreover, this profile of a typical HCW is reflected internationally, in countries such as the USA (Quinn et al. 2016) and some European countries (Boerma et al. 2013). The HCW role, consequently, is often held in low esteem (Stone 2004). HCWs may be perceived as poorly educated women who simply draw upon their skills as mothers to perform their menial, poorly paid home care roles (Meagher 2006; Nay and Garratt 2002; Somerville 2006). Yet, this professional role is physically and emotionally challenging, requiring competence in a range of basic and complex tasks, all performed alone in peoples' private homes. Job preparation and training frequently fail to prepare these workers for their home care roles (Stone et al. 2013), as evidenced by disturbing rates of occupational injuries (e.g. muscle strains, violence, exposure to infectious agents and dangerous chemicals, sharps injuries) and high staff turnover (Markkanen et al. 2014; Quinn et al. 2016; Stone et al. 2013). Conversely, many HCWs report a high level of job satisfaction (Quinn et al. 2016). They value the close relationships they develop with their clients and the autonomy that a home-based workplace affords (Quinn et al. 2016). Therefore, training and job preparation for HCWs need to encompass strategies that encourage them to embrace this autonomy and work safely at the same time. That is, we need to support these workers to exercise agency in their work and learning.

Brief induction classroom training sessions in the Australian home care sector are a common method of orientating new HCWs to their roles, conveying information such as safe manual handling, managing challenging behaviours, infection control and other important safety procedures. Classroom-based manual handling training, specifically, has been largely unsuccessful in reducing the alarming rates of musculoskeletal (predominantly back) injuries amongst these workers (Faucett et al. 2013; Markkanen et al. 2014). While larger organisations may offer more systematic, mandated training programs, smaller ones tend to provide more ad hoc and fewer hours of training, citing financial constraints or workers "already skilled enough" as reasons why this is the case (Baldock and Mulligan 2000). Moreover, these sessions vary in format, content and duration (Aylward et al. 2003; Baldock and Mulligan 2000; Bernoth 2009). For example, some HCWs attend brief classroom training followed by a period of supervised practice in the workplace of up to 2 weeks, others receive no formal induction training for their roles at all (Palesy 2015).

An additional concern is the failure of HCWs to take up or sustain safe manual handling techniques in their isolated workplaces, for reasons such as (a) personal disposition for learning without direct support, (b) inadequacy of education experiences being offered in classrooms and workplaces and (c) the degree of organisational support (Bernoth 2009; Palesy 2015). This perfunctory and inconsistent workplace preparation creates a unique set of challenges for HCWs as they seek to apply what they learn in the classroom to tasks in the privacy of clients' homes, all in the absence of expert guidance. Therefore, understanding how best to assist these

workers to effectively learn their occupational practice, and thereby reduce the incidence of musculoskeletal injury, represents an important and worthwhile task.

14.3 Subjectivities: How Personal Epistemologies Influence Agentic Actions

From a sociocultural perspective, Pea (1987) claims that learning and transfer are selective, in so far as individuals will only transfer what they consider to be appropriate and consistent with their individual values and culturally endorsed practices. In this way, their values, beliefs and interests come to the fore. According to Pea, part of this selective transfer includes learners deciding for themselves whether or not the knowledge transfer is worthwhile. Yet, while the cognitive constructivist perspective considers workplace learning in terms of securing conceptual and procedural goals for competent performance, less attention has been paid to individual learner subjectivities such as dispositions (Billett 1997; Evans et al. 2006; Perkins et al. 1993). Certainly, person-dependent dispositions are likely to influence learners’ understanding and construction of concepts and procedures and how these are utilised in activities such as workplace practices (Billett 1997; Collin et al. 2008; Evans et al. 2006; Hodkinson et al. 2008). In short, these learner subjectivities direct and motivate agentic action, which may have positive or negative consequences for workplace learning. Figure 14.1 provides an overview of these subjectivities and depicts the relationship between dispositions, agency and workplace learning.

Dispositions have been described as individuals’ tendencies to put their capabilities into action (Perkins et al. 1993). Their executive properties, such as attitudes, values, affect and interest (Prawat 1989), intentionality (Noe 1986; Salas et al. 2012) and sense of self or identity (Billett and Pavlova 2005; Collin 2009; Collin

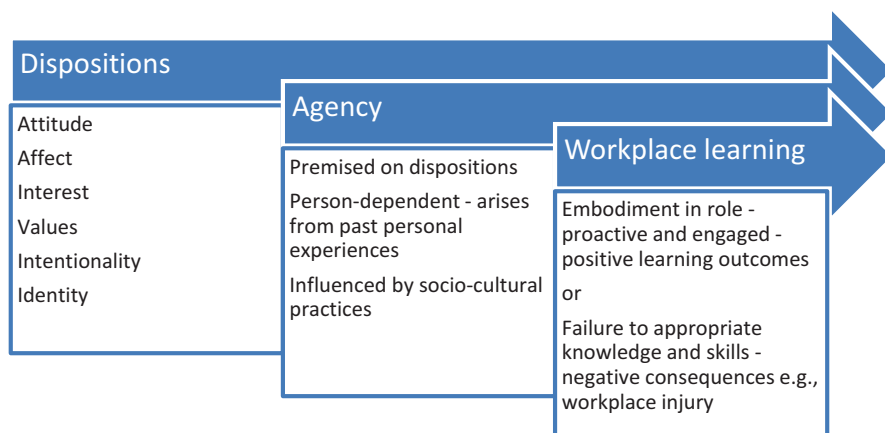


Fig. 14.1 Dispositions, agency and workplace learning

et al. 2008), are held to influence the differences between what learners are capable of doing and what tasks they actually undertake (Collin 2009; Collin et al. 2008; Hodkinson et al. 2008; Perkins et al. 1993). In this way, dispositions are considered to have both person-dependent and situational dimensions: they are inherent in an individual's representation and organisation of knowledge structures (Hoffman 1986; Perkins et al. 1993), arise from personal histories (Rogoff 1990) and are shaped by situational and cultural practices (Billett 1997).

Dispositions are central to how HCWs exercise their agency to take care of their bodies and work in ways that prevent injury through inappropriate manual handling. Some studies report that HCWs are motivated to apply their classroom manual handling to stay fit and healthy for their loved ones and to remain in the workforce (e.g. Palesy 2015; Town 2005). However, a prevailing attitude in the healthcare sector is that musculoskeletal injuries are an inevitable part of the work, and many workers consider their roles to be a "labour of love" (Markkanen et al. 2014; Pompeii et al. 2009; Reme et al. 2014). In these instances, both person-dependent (e.g. maintaining good health) and sociocultural factors (e.g. manual handling injuries are an accepted part of work in healthcare) have shaped the dispositions of workers in the healthcare sector and have either positively or adversely affected the transfer of their manual handling training (Bernoth 2009; Markkanen et al. 2014; Palesy 2015; Pompeii et al. 2009; Reme et al. 2014; Town 2005).

It follows, therefore, that learning the practice requirements for work appears to depend as much on the trainees' intentionality or inclination to apply their learning as it does on their actual workplace situation (Salas et al. 2012). In classroom settings, some HCWs may demonstrate mastery over appropriation, as described by Wertsch (1998). That is, they are compliant learners and will simply master or replicate the skills without real commitment and as a product of social suggestion (i.e. the peer pressure of colleagues in a classroom, organisationally mandated training). However, because of their individual values and beliefs (e.g. decontextualised training, no perceived need to change current practices), they may fail to make the knowledge their own or appropriate the manual handling skills in the workplace (Palesy 2015; Town 2005). So, there appears to be a clear and negotiated relationship between individuals' thinking and acting and the sociocultural setting in which they act.

Furthermore, despite the external or social press of workplaces, individuals may still exercise their agency in ways associated with maintaining their sense of self and identity (i.e. subjectivity) (Billett et al. 2004; Billet and Pavlova 2005; Collin 2009; Collin et al. 2008; Hodkinson and Hodkinson 2004). In this way, their subjectivities extend to how they act and are not restricted to ideas and goals. This claim is supported by Somerville (2006), who found that few aged care workers had any previous desire to enter this sector as a vocation, yet their engagement in the role very quickly led to the formation of subjectivities which identified with and valued the work, as evident in how they performed it. In the case of these workers, Somerville concluded that mandated manual handling training did little to contribute to their learning to work safely. Instead, it was the practice of their daily work and the formation of subjectivities as aged care workers that was crucial to their learning – they became "embodied" in the role.

In the same way, HCWs learning manual handling in the classroom, and then adapting these practices to the workplace, may exercise their agency and become embodied in their roles, with either positive or negative consequences for their learning. On one hand, the autonomy afforded by working in clients' private homes may require effortful engagement by HCWs, which may lead to highly proactive and engaged learners with rich learning outcomes and sense of occupational subjectivity (Billett 2010). Alternatively, given this work is poorly supervised and regulated, and home care role is commonly viewed as an extension of the mothering role (Markkanen et al. 2014; Nay and Garratt 2002), workers in this sector may come to view it and themselves as being unimportant and accept musculoskeletal injury as part of the job. So, an occupational subjectivity which includes being self-sacrificing by these workers may lead to poor learning outcomes and practices (Clarke 2013).

In summary, person-dependent dispositions such as attitude, values, affect, interest, intentionality and identity motivate and direct individuals' agentic action (Collin 2004; Eteläpelto et al. 2013; Smith 2005), affecting learning outcomes in productive (e.g. prevention of workplace injury, autonomous work role) or destructive (e.g. injury as an accepted part of home care, no perceived relevance of training, role held in low esteem) ways. These subjectivities also mediate how individuals interpret and engage with what is afforded in their workplaces (Billett 2010) and influence how individuals negotiate with and learn from the social world in which they engage. So, there is interdependence in the workplace learning process. It is influenced by both personal and situational factors, and the interplay between each occurs in different and distinct ways for workers as shaped by workplace circumstances (Billett 2010; Collin 2004). One set of such circumstances is the relative social isolation of these workers (e.g. in the home care setting), where workers are required to learn concepts and procedures (e.g. manual handling techniques) that are derived from the social world, with negligible support or supervision.

14.4 Recounting the Agentic Action of HCWs

In learning the requirements for their home care roles without direct supervision or support, workers in this investigation deployed, in different ways, their past personal experiences (e.g. work, life, education), the classroom training provided, opportunities to engage with other HCWs and support from other informed sources in learning the requirements for their role. Moreover, these workers exercised agentic action by "personalising" their own scaffolding or learning supports. That is, they selected, engaged with and subsequently withdrew from engaging with their learning supports as personally required, rather than relying on an "expert" to decide how and when these forms of learning support should be used and withdrawn. Examples of this agentic action are presented in Table 14.1. The left-hand column identifies the agentic action which emerged from the data, and the second left column provides sample responses from informants to support this action. The next column sources the disposition which appears to have initiated the agentic action of

Table 14.1 Learning in the absence of expert guidance: agentic action

Agentic action	Sample responses	Source of disposition	Learning outcome
Workers consider their own personal circumstances, experiences or situations when learning without expert guidance	“I was relating [the classroom training] to what I already knew about cranes and pallet jacks to people hoists” [Rick]	Interest, identity	Dispositions and previous experience in working with machinery supported Rick to successfully learn how to operate a mechanical hoist without expert guidance
	“I just thought ‘well there’s the bathroom, it’s like mine. There’s this, there’s that, it’s like mine’ ... I just made simple comparisons” [Di]	Attitude, affect, intentionality	Dispositions, shaped by the situation, enabled Di to safely bathe a client in a small bathroom
Socially isolated workers apply classroom training to their work only if there is a perceived personal benefit	“I’m used to doing it differently [to the classroom training] and I didn’t think I could reprogram myself to do it [the trainer’s] way” [Kate]	Attitude, identity, intentionality	A lifetime of experience supporting her disabled sister pressed Kate into disregarding all classroom training
	“[These are] exactly the same exercises my wife did when she had the kids. So I didn’t feel as though it applied to me” [Rick]	Attitude, interest, identity	Rick’s identity as a male pressed him to disregard the back care exercises taught in the classroom
Workers draw upon their resilience and extensive life experience when learning without expert guidance	“I’ve raised a daughter on my own... I [can] look out for myself” [Jen]	Attitude, values, identity	Jen’s identity as a resilient single mother supported her to work safely without supervision or support
	“I can cope on my own, I have a lot of life experience and I have worked in a lot of different jobs, so I am assertive ... I can always work out the right thing to do” [Joe]	Attitude, affect, identity	Joe’s previous experience emigrating from Portugal and adjusting to life and work in Australia provided the self-belief that he could work successfully in the absence of expert guidance.

(continued)

Table 14.1 (continued)

Agentic action	Sample responses	Source of disposition	Learning outcome
Socially isolated workers seek opportunities to engage with peers and others outside of the classroom	“We need to be able to phone-a-friend” [Mike]	Attitude, values, identity, intentionality	Each time he was required to perform new manual handling practice in his client’s private home, Mike contacted a more experienced worker for telephone support to ensure that he was working safely
	“What I’d really like to see are [care worker] meetings, where we can sit around and say “listen, I’ve got this situation, what do you think I should do?” [Di]	Attitude, values, intentionality, identity	Di regularly asked the organisation’s coordinator for regular meetings as part of new workers’ learning support. Di also considered that these meetings would assist HCWs to feel part of a professional organisation
Socially isolated workers use written materials in the workplace, e.g. organisational policies, work instructions and classroom handout, as a form of learning support	“Even if you don’t need them or use them...it’s good to have a safety net” [Anne]	Values, intentionality, identity	Anne referred to the classroom handout frequently to effectively assist her learning in the first few weeks in her HCW role. Anne also considered these materials as a means of professionalising the HCW role
	“I used them all the time in the beginning...but not as much these days” [Rick]	Values, interest, intentionality	Drawing upon his previous mechanical experience, Rick frequently referred to instruction manuals to assist him to work safely with his client

these workers, and the right-hand column provides a brief explanation of the learning outcomes in each specific situation.

Table 14.1 identifies five categories of agentic action reported by HCWs when learning in the absence of expert guidance. These are (a) the value of personal experience, (b) perceived relevance, (c) resilience, (d) peer support and (e) written materials as learning support. Each is now briefly elaborated.

Throughout the investigation, informants consistently declared that they drew strongly on their personal experiences and previous situations while learning and

applying their classroom training. This was particularly the case in the early stages of learning the requirements for their roles (i.e. in the first 4 weeks on the job). Described by one informant as making “simple comparisons”, this view is supported by Collin (2004) and Gergen (1994), who also suggest that individuals draw upon their own personal histories and circumstances in reconciling what they experience. An additional example is informant Di, who recounted a situation in which a client had fallen out of the wheelchair onto the floor. When describing how this potentially catastrophic situation was managed, the new worker considered previous jobs, mothering, common sense and her recent classroom training as being important in assisting her to keep both herself and the client safe and free from injury. This scenario exemplifies the person dependence of HCWs when learning to enact safe manual handling techniques in circumstances of relative social isolation. That is, in the absence of adequate training and guidance, they exercise agentic action by drawing upon a range of personal understandings, procedures and values to work safely with their clients.

In keeping with the person dependence of these learners, many informants also reported that application or adaptation of the classroom manual handling training to their workplaces would take place only if they could perceive a benefit for themselves. For example, informant Kate, whose personal history included many years of providing support to her younger sister with a high level of physical disability, failed to perceive the relevance of the classroom training as she already was confident with manual handling techniques. In the case of this worker, her personal history and life experience had afforded access to an extensive range of scenarios from which to search for manual handling solutions in the workplace. Consequently, Kate exercised agentic action by actively and openly rejecting the classroom training in favour of her existing knowledge about manual handling.

In keeping with the self-confidence displayed by Kate, assertiveness and resilience were also reported by informants as personal factors that supported the application of classroom manual handling skills and knowledge to the workplace. Strongly linked to these attributes were both the personal lives and past work experiences of workers, where they reported having lived or worked alone as a factor which assisted their learning in the isolated circumstances of clients’ homes. Informant Jen, for example, recalled her experience as a single mother, and also a previous unskilled job in a chicken processing factory, where workers constantly squabbled and frequently consulted the supervisor over trivial matters, as triumphs which assisted her to work and learn in a role without direct support and supervision. This worker (and others) may be considered as having a high level of personal agency, in that they conduct their working lives and workplace learning in view of their own personal interests and goals (Billett and Pavlova 2005; Collin 2009; Collin et al. 2008; Somerville 2006). With past personal achievements in working or raising families alone, some new workers appeared to embrace the autonomy afforded by the privacy of clients’ homes.

Conversely, while independence in the workplace was welcomed, many informants reported the need for increased support from peers and others when learning to work safely in their clients’ homes. Indeed, some new workers admitted to

seeking assistance and support outside the organisational guidelines, which stipulated that all work-related issues should be directed to the service coordinator in the first instance. For example, new worker Mike phoned a more experienced colleague outside of working hours after his client experienced a seizure during a manual handling task. Having not witnessed seizure (i.e. involuntary muscle spasms) activity before, Mike confessed that he was terrified and did not know how to respond appropriately. Describing this strategy as “phone a friend”, this worker exercised agentic action by pursuing an opportunity (despite potential organisational reproach) to meet, discuss and learn about the issue with his peers in an environment away from the client’s home.

Other opportunities were also sought by new HCWs to engage with and learn from others. For example, they participated enthusiastically in the practical manual handling group activities prescribed in the classroom without any prompting by the trainer and reported this group work as a constructive way to exchange information and ideas and learn more about their home care role. Terms such as “forums” and “meetings” were used frequently in the interview responses from informants, and many of these new workers emphatically requested a regular return to the classroom for the purpose of refreshing and extending their knowledge and skills in manual handling.

This type of engagement as a means of assisting learning is supported by Billett (2011), whose study of mature-aged Singaporean workers reported that older workers did not want to be treated as students who needed instruction from others, but preferred instead to engage in “dialogue forums”. The study suggested that these forums, held in or around the workplace (e.g. on the job, meal breaks), would provide rich learning opportunities whereby workers could share their knowledge and learn from others at the same time, without positioning themselves as students in a teacher-student relationship (Billett 2011). Similarly, without supervision or support, these socially isolated workers exercised agentic action by seeking and engaging intentionally in learning activities in ways independent of the organisation’s manual handling training curriculum and, particularly, as a means of sharing information and ideas amongst workers, providing instruction and debriefing.

The final theme associated with agentic action of HCWs is found in new workers’ use of written materials to support their learning in the absence of expert guidance. The provision of hard copies of organisational policies and procedures in these socially isolated workplaces, along with a set of step-by-step instructions and photographs depicting how to perform key manual tasks, was welcomed by informants as a valuable form of learning support and a “handy reference” for performing tasks in the absence of support from their trainer or peers.

However, a changing pattern of engagement with these written materials was identified from this study of HCWs. Dependence on policies, procedures and instructions for learning the manual handling requirements of their role was most evident in the first 4 weeks post classroom training. At 12 weeks, conversely, less reliance on these supports was reported, and workers placed more value on the sociality arising from interactions with peers and their client as a way of monitoring their manual handling performance. These socially isolated workers still considered

written materials to be an important form of learning support or “safety net”, however, and many informants had directed new(er) workers to these resources as a means of learning and enacting safe manual handling techniques.

Reliance on policies and procedures as a major source of practice knowledge is supported in studies of nurses (Hauck et al. 2013; Melnyk et al. 2014). Isolation (e.g. of nurses in remote settings), limited access to computers and time constraints may be factors which contribute to this trust in written resources as the main source of information from an organisation (Estabrooks et al. 2003). The same may be true for HCWs. In clients’ homes, where shifts are often only of 2–3-h duration and consist largely of physical activities, there is little time to access other sources of information, such as newspapers and journal articles. Moreover, the nature of these workers (e.g. entry level) suggests that they may not have the skills required to access, read and critically appraise other sources of information and may believe they lack the authority to implement any findings into practice (Gerrish and Clayton 2004). In any case, the HCWs in this investigation initiated and exercised agentic action by engaging with what was afforded as learning support in their socially isolated workplaces. Furthermore, they exercised agentic action by using these written resources as a form of learning support in very different and personal ways. This person dependence and personalised learning support is offered as a means of espousing and illustrating the agency of HCWs and is discussed in the next section.

14.5 Substantiating the Agentic Action of HCWs

The previous section discussed five themes which demonstrate how HCWs in the study exercised agentic action: (a) the value of personal experience, (b) perceived relevance, (c) resilience, (d) peer support and (e) written materials as learning support. This discussion and supporting sample responses from informants emphasise the highly person-dependent nature of their work and learning processes in the absence of expert guidance. Personal capacities, previous experiences (e.g. work, life, educational), life histories and ongoing negotiations with the social world shape how individuals respond to and engage with their work and learning and, in this study, were shown to influence how these workers learn and enact the skills required for home care work. These workers exercised a high degree of personal agency, in that they each set their own personally particular agenda for learning the requirements of the role and for conducting their occupational practice and then took and monitored their actions in addressing those goals (Billett and Pavlova 2005; Eteläpelto et al. 2013).

Moreover, person-dependent factors likely mediate how learners engage with what is afforded in both their workplaces and their social world (Billett 2010; Collin 2004). This person dependence appears to be the case for HCWs who conduct their practice in the absence of expert guidance. More specifically, the concepts of personal epistemologies and scaffolding offer explanations of how these individuals

exercise agentic action in relatively socially isolated circumstances. These two concepts are briefly elaborated here.

HCWs of this investigation cited various personal rationales for taking up (or rejecting) the manual handling techniques taught in the classroom and applying them to their support tasks in their clients' private homes. In most cases, they considered their own personal circumstances, experiences or situations when learning the requirements for their role, relating what they already knew about previous work (e.g. with warehouse pallet jacks) to tasks performed with their clients (e.g. using people hoists). If new workers could perceive a benefit to themselves, such as the health and wellbeing of their children, they were more likely to be engaged learners (Billett and Pavlova 2005; Pea 1987; Somerville 2006). Moreover, informants suggested that their resilience and life experience (e.g. sole parenting) were character traits that assisted them to "work things out" when learning in the absence of expert guidance. Such findings coincide with what Gergen (1994) proposes about how our actions in the present are always a synthesis of earlier moments, relationships and contexts, in making sense of what we experience.

Therefore, it seems that the learning and working processes of these individuals are highly dependent upon their personal experiences and epistemologies, perhaps even more so than for those who learn and work with the close guidance of others. That is, personal capacities, previous experiences, life histories and ongoing negotiations with the social world, all influence how socially isolated workers engage in, and learn the requirements for, their occupational practice (Rogoff 1990; Scribner 1985; Valsiner 2000). Moreover, findings from this investigation suggest that the personal epistemologies of workers who conduct their occupational practice in the absence of expert guidance are likely to be more personally agentic (Billett et al. 2003; Smith 2005) than those with access to direct supervision and support. Consequently, learning safe work practices in the absence of direct guidance is person dependent and may be successfully negotiated by individuals agentially. However, appropriate curriculum and training provisions can support and augment the exercise of individual agency. One such support is scaffolding provided by artefacts, which are discussed here.

Besides the personal bases for learning in the absence of expert guidance, the provision of hard copies of written materials (e.g. classroom handout, organisational policies and procedures, step-by-step instructions for key manual handling tasks), and engagement with others outside the workplace, was reported as enhancing the work and learning for these HCWs. These materials and workers' engagement acted as "scaffolding", a term used to capture the nature of support and guidance in learning and development (Bruner 1975; Wood et al. 1976). A typical trajectory is for teachers and more knowledgeable others to scaffold the learning of a novice, assisting them to meaningfully participate in, and gain skills in tasks that are beyond their unassisted abilities (Beland et al. 2011). Then, the scaffolding is removed or "faded" by the teacher once the task is mastered (Brown and Palincsar 1989; Collins et al. 1989; Wertsch 1985). Rather than initiation, construction and removal of scaffolding by the expert, however, this inquiry's informants were found to take decisions to engage with and then withdraw the learning support themselves.

That is, they managed the scaffolding, through active self-monitoring of their progress.

Furthermore, these informants were selective about the type of scaffolding used to support their learning in the absence of expert guidance, and some required less scaffolding than others. Even when the materials were not needed, their presence provided an implicit form of support, described as a “safety net”. So, the ways in which these socially isolated workers utilised instructional scaffolding offer a different perspective than those adopted in orthodox accounts, in which the use of scaffolding is constructed and incrementally relinquished by teachers or experts (Brown and Palincsar 1989; Bruner 1975; Collins et al. 1989; Wertsch 1985; Wood et al. 1976). In contrast, these workers “personalised” their scaffolding: that is, they constructed it based on their personal learning requirements and took the decisions to dismantle the scaffolding themselves. In some ways these workers assumed the roles of both instructor *and* learner through the exercise of their personal epistemologies. This distinction emphasises again how learning in the absence of expert guidance is personally mediated and agentic.

14.6 Supporting the Agentic Action of HCWs

Accordingly, what follows are recommendations about supporting learning in view of the personal bases for learning in circumstances of relative social isolation. These recommendations are presented in Table 14.2. The left-hand column reiterates the agentic theme as already described, and the right-hand column proposes strategies for supporting the learning of socially isolated workers in each theme.

Table 14.2 proposes several classroom and workplace training provisions for supporting personally mediated learning. Firstly, classroom training sessions for these individuals should consider a format that supports and encourages these workers to establish a positive disposition for their work, through sharing of personal histories and experiences related to caring, motivations and expectations in taking up the role. This format may include informal introductions, and practical group work, where trainees can exchange information and experiences. Moreover, in classroom settings, isolated workers could be encouraged by experts (e.g., classroom trainers) to embrace their unique experiences, and use them as reference points from which to initially learn, and then extend their professional knowledge and skills. In these ways, the development of personally agentic plans for learning and enacting the requirements of the role is “sanctioned” by the organisation before trainees even leave the classroom, and new workers may be more confident and supported in their socially isolated roles.

Secondly, more opportunities should be provided within the employing agency’s organisational training framework for ongoing interaction and sharing of knowledge and skills. These opportunities could take the form of team meetings, learning forums or additional classroom training opportunities, where the sharing of “war

Table 14.2 Effective workplace learning in the absence of expert guidance: supporting agentic action

Agentic action	Supportive strategies
Workers consider their own personal circumstances, experiences or situations when learning in the absence of expert guidance	Classroom training sessions to encourage new workers to sharing their personal histories and experiences related to “caring” in the home
	Classroom training sessions to include practical group work during which work-related experience and information can be exchanged with peers
	Encourage sharing of personal stories from others (e.g. peers, trainers, coordinators)
Socially isolated workers will apply or adapt classroom training to their workplace only if there is a perceived personal benefit to themselves	Classroom training sessions to encourage new workers to relate their classroom knowledge to their own personal circumstances while learning in the workplace
Resilience and extensive life experience are essential character traits when learning in the absence of expert guidance	Encourage new workers to embrace their unique personal histories, and use them as reference points from which to initially learn, and then extend their professional knowledge and skills
Socially isolated workers seek opportunities to engage with peers and others outside of the organisational guidelines	Provide opportunities for workers to meet with their peers and others in formal settings, e.g. team meetings and additional classroom training
	Encourage sharing of personal stories from others (e.g. peers, trainers, coordinators)
	Reiterate the value of personal histories when learning and extending workplace knowledge and skills
Written materials in the workplace, e.g. organisational policies and procedures, step-by-step work instructions and classroom handout, are a valuable form of learning support for socially isolated workers	Provide a uniform set of written resources in each socially isolated workplace, without rigid stipulations about how and when they should be accessed and utilised

stories” (Orr 1990) may reiterate the value of personal experience and lead more easily to a shared understanding and creation of new knowledge.

A final recommendation is to continue to provide a range of learning supports or scaffolding for workers who practice and learn in the absence of expert guidance. In the case of these HCWs, written reference materials and access to others appear to have been the most useful supports. When providing these supports to isolated workers, it may be important to consider again the personal learning capacities of individuals. So, it may be helpful to provide these supports (e.g. written resources) without rigid requirements for how and when they are to be accessed. The recommendation here is to make available a uniform set of supports and provide a clear explanation and directions for their use and access. However, beyond these instructions, rather than following a set of organisational trajectory, the learners them-

selves should be encouraged to decide on the type and frequency of their interactions with these supports and to access or withdraw these supports as required. In this way, each individual's unique and personal pathway to expertise is acknowledged.

14.7 Conclusions

This chapter offers an account into the work-related learning of a group of HCWs who conduct their occupational practice in the absence of expert guidance. In these circumstances, individuals deploy their personal experiences and histories, classroom training, opportunities to engage with others and support from other sources in learning, working and developing in their socially isolated roles. So, learning in the absence of expert guidance is an experience which may be negotiated agentially by learners, premised on their dispositions and what is afforded in their social world.

This person dependence may be mediated by effective training provisions, both in the classroom and workplace. Recommendations include a classroom format that encourages the development of positive worker subjectivities and dispositions for the specific occupational role. In addition to initial classroom training, group work and peer interaction should be promoted in forums such as team meetings and ongoing classroom training sessions. In the workplace, a uniform set of supports should be provided to facilitate effective learning. However, in view of individuals' personal learning capacities, they should be encouraged to decide on the type, depth and frequency of their engagement with these supports. Through acknowledging and supporting the agentic action of these socially isolated workers, they may be encouraged to formulate their own personal learning and development plans and establish and advance their unique worker identities.

Finally, while this chapter advances a contemporary account of learning, it is concluded that there is more work to do here. Given that much of our work is indeed conducted in relative social isolation (e.g. in private homes) and, more specifically, in view of the expansion of the home care sector both in Australia and internationally, more research is needed on the kinds of education and training experiences that may facilitate learning and working safely in the absence of expert guidance.

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Chapter 15

Professional Virtues and Agency at Work: An Ethnography of Software Developers

Mira Ylén

15.1 Introduction

In this chapter, agency is examined from a practice-based perspective with an ethnographic research approach. The focus is on the investigation of organisational practices and virtues in software developers' work. A Finnish software development organisation served to provide the research context for this study. The company studied was named Best Workplace in Europe in 2016 and was named the Best Workplace in Finland three times from 2014 to 2016 in an annual survey by the Great Place to Work® Institute, a global research, consulting and training firm that evaluates leading organisations worldwide (www.greatplacetowork.net). The relationship between organisational practices and professional virtues seems to be an important factor in why the software developers at this company find their workplace a great place to work: The company's organisational practices enable professional agency that is in line with the kind of virtues that are necessary to the software developers' work.

This chapter contributes to the discussions concerning meaningful work life found in many studies on professional agency (Henttonen and LaPointe 2015; Hökkä et al. 2014; Eteläpelto et al. 2013; Järvensivu 2010; Lips-Wiersma and Morris 2009). From an agency perspective, this study provides one interpretation of how a work organisation can create space for agency by supporting professional virtues. Although this study focuses on software developers, many characteristics relevant to modern, knowledge-oriented, creative expert work in team-based, low-hierarchy organisations, where constant learning and development are crucial, are manifest in software development work (see Collin et al. 2017, this volume; Kerosuo 2017, this volume; Vähäsantanen et al. 2017, this volume).

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In this chapter, I will first describe how professional agency is conceptualised and approached. I put forth a practice-based perspective on conceptualizing professional agency, frame my approach to professional virtues and agency and describe the applied ethnographic approach used in studying the professional agency of software developers and then present the research questions. Next, the four identified organisational practices enabling professional agency are set out, focusing on the virtues of work: democracy, experimentation, self-directed development and independent project teams. Finally, I reflect on how organisations and their practices can foster professional agency by enabling working conditions such that employees can be guided by their professional virtues when completing their tasks.

15.2 A Theoretical Framework for Studying Professional Virtues and Agency

I approached agency as an everyday activity—as something that people regularly engage in at work (Goller and Harteis 2017, this volume). From this perspective, manifestations of agency can be studied by employing both a practice-based perspective and an ethnographic approach. I based my study of the software professionals' work on the concept of professional agency described by Eteläpelto et al. (2013): At the organisation studied, professionals regularly make choices and influence and take stances on issues concerning their work.

15.2.1 A Practice-Based Perspective

In order to understand the daily work of software developers, I asked them about their work practices. One answered, “This is just how we do things here”. This comment encapsulates the nature of a practice. Practice theory says that practices are established ways of thinking and acting that are obvious to the people participating. They are socially shared and repeated among a certain community or in a certain place, covering the dimensions of mind, body and material matters. (Henttonen and LaPointe 2015; Miettinen et al. 2010; Nicolini et al. 2003; Reckwitz 2002; Räsänen and Trux 2012.) In addition to practice theory being an excellent starting point in researching culture, it offers tools to grasp the fast-paced professional work of software developers (Corradi et al. 2010; Gherardi 2009; Nicolini et al. 2003; Orlikowski 2010).

The richness of a practice-based approach lies in its multidimensionality. Its applications range from concrete physical action to abstract shared discourses and from individuals to structures (Chia 2003; Feldman and Orlikowski 2011; Gherardi 2009; Miettinen et al. 2010; Orlikowski 2010; Reckwitz 2002; Swidler 2001). The most relevant contribution of practice theory is its way of conceptualizing social

order (Nicolini 2012). In practice-based approaches, social interactions are comprised of a series of practices (Schatzki 2001). Like organisations, these practices do not exist as a list of rules and regulations; a list of rules and regulations exists only inasmuch as the members of the community of practice carry them out by their repeated actions (Nicolini 2012).

According to Eteläpelto et al. (2013), professional agency is always a two-way street: Both agents and the culture and practices of the workplace influence it. Practices are a relevant reference point when studying professional agency because they either enable or restrain it (Emirbayer and Mische 2010; Eteläpelto et al. 2013; Henttonen and LaPointe 2015; Nicolini 2012; Räsänen and Trux 2012). Professional agency always requires the power to make changes, and within practices one either has or does not have this power (Eteläpelto et al. 2011b). This point of view should be kept in mind later when we discuss the idea of work organisations and their practices as enablers of professional agency.

In this chapter, software developers' work is studied as a *professional practice*. This can be seen as a set form of practical activity, where single work practices are combined as webs, bundles and combinations thereof, finally crystallising as a professional practice (Räsänen and Trux 2012). Professional practice is not only the expertise attributed to a profession but a socially, culturally and historically built entity (Kemmis 2010)—a practical, moral and identity-bound phenomenon (Green 2009; Räsänen and Trux 2012). In addition to studying practical activities and agency, a practice-based approach can also help us discover the principles that explain and guide our actions (Feldman and Orlikowski 2011).

15.2.2 *Professional Virtues and Agency*

The moral dimension of work—referred to as the virtues of a professional practice or *professional virtues*—is essential to this chapter's perspective on professional agency. Professional practice, like any other practice, is not simply raw action; rather, it is always formed by and oriented through meanings and purposes. That which is worth pursuing is often referred to as values, norms or goods (Kemmis 2009, 2010). MacIntyre (1987) sees practice as a socially set form of human cooperation that is guided by shared goals and what he refers to as internal goods. Individuals' human characteristics, or virtues, enable them to pursue these internal goods. MacIntyre's theorization on the moral dimension of practices is profound and nuanced; however, in this research, the concept of virtue is used more generally, and the concepts of internal goods, goals and aims are used when talking about the moral dimension of professionals' work.

In a professional practice, goods and virtues themselves are both means and ends (Beadle and Moore 2011). If we take an example from the software development industry, writing quality code is not only a means to produce functional software, but is valuable, desirable and satisfying in and of itself. Only through the experience we gain by participating in a practice can we reach the proficiency to evaluate the

internal goods of a practice (MacIntyre 1987). Professionals constantly negotiate, evaluate their performances and improve upon their own criteria of excellence. Through action aiming at perfection, practices develop to sustain the developed understanding of the criteria of excellence (Beadle and Moore 2011; Gherardi 2009; MacIntyre 1987). As Silvia Gherardi (2009) says, practice is “a matter of taste”—it includes a sense of what is appropriate, good and beautiful.

A sense of what constitutes “good work” is included in professional practices. The goals are built in the practice and people participating in the practice have a kind of collective sense of “what has to be done” (Henttonen and LaPointe 2015; Nicolini 2012; Räsänen and Trux 2012). This can be called *professional ethos* (LaPointe and Tienari 2013). Reckwitz (2002) argues that practice theory challenges the individual perspective of a human being as a rational decision maker: we are not only rational actors guided by our conscious minds, but as we as actors form practices, those practices guide the ways in which we act and the goals we pursue. In this sense, work is an important cultural practice that becomes a part of an individual (Billet 2006).

Professional agency as a concept builds a relationship between professionals and their work practices—whether that agency consists of half-conscious daily activities guided by practices, or conscious restructuring of the practices (Eteläpelto et al. 2011c; Henttonen and LaPointe 2015). As in professional practice, professional agency is related to shared ideals and goals, virtues and aims (Eteläpelto et al. 2013; Kylliäinen 2012; MacIntyre 1987). One’s perception of oneself as a professional stems from professional practice. Further, this also influences what kind of agency professionals exercise in their professional practice—there is always a certain moral purpose behind professional agency (Green 2009; Eteläpelto et al. 2013).

15.2.3 *An Ethnographic Approach*

The themes presented above were studied within an ethnographic research setting at Finnish software development company Vincit. Based on the nature of this study, the researched organisation is referred to by name. This was agreed to by the company and is in line with the finding of one relevant professional virtue in the community: openness. Since 2007, Vincit has developed from a start-up company founded by two friends into an ever-growing software house employing more than 300 people. The organisation provides agile software development services, focusing on web service and information systems, mobile applications, embedded systems, service design and consulting. During the research process I began to work part-time at Vincit, in 2013, as part of the People Operations team. This enabled me to enter the field smoothly and helped provide an overall view into employees’ daily lives.

Despite its advantages, functioning as both a researcher and an employee was not without its challenges. The separation of these two roles was impossible. When I assumed the researcher role, it was not as an anonymous outsider but as a colleague

starting to have a personal relationship with most of the software developers participating in the study. However, in conducting the analysis I consciously assumed the position of a researcher, approaching and processing the research data from an outsider perspective, relying on field observations and on the academic concepts chosen.

The software industry and profession felt truly foreign to me, a fact that supports my conclusion that I approached this analysis from the perspective of a researcher rather than an employee. However, my inquisitive attitude has not been only about being a novice, but also about an adequate, problem-based research approach—when you do not know in advance what you are looking for, you are more likely to find something interesting (Sandberg and Alvesson 2010).

When I began my research, everyday life at the company seemed peaceful and quiet, with software developers simply sitting behind their computers. But everything was bubbling underneath the surface: dozens of software projects are starting and ending, people are moving from one project team to another. There are no organisational charts, permanent teams or bosses. Each project team is empowered to work as they see fit. Communication channels are live and loud, phones are ringing and meeting rooms are crowded with project teams working with customers, trying to create a common understanding on complex software projects. “Controlled chaos” is maybe the best way to describe the environment of a modern, agile software company.

Instead of controlling the chaos, it seemed to be encouraged. A central philosophy at Vincit is a “no-policy policy”—a rule about not having any rules. Instead, everyone is expected to do things the way he or she feels is best. Another motto is, “It is easier to ask for forgiveness than ask permission”. Employees are continuously encouraged to influence their own work and the organisation’s practices. There are only two official goals: happy employees and happy customers. But within this framework, everything is open to continuous adaptation, experimentation and development.

My study relied on work research (Barley and Kunda 2011). Entering into the everyday life of software developers allowed me to benefit from having an insider’s perspective, and my weekly presence in the field for over a year gave me access to rich research material. I did eight open-ended interviews in 2013–2014. Each of the interviews lasted 1–1.5 h and produced 150 pages of transcribed data. Most of the interviewed software developers volunteered to discuss their work with me at my request at a company event. A few were asked to participate in order to reach a sufficient number of interviews and to provide a diverse base from which to draw the data. The interviewed software developers worked in different positions, from recently graduated junior developers to experienced project leads. They represented different ages, from 20+ to 40+, and had been employed by the company from two to five years. They all had university degrees in software development. Some of the developers interviewed had begun their careers with small and agile companies such as the organisation studied, while others had worked for large corporations. The interviews focused on a routine workday, although I tried to uncover stories that would reveal the moral dimension of this work. I also observed project and company

meetings, orientation events, and development workshops. All observations were recorded through notes and audio taping.

In addition to the interviews and observed situations, I discovered a vast amount of other useful material. For example, while developing a new salary model, employees produced a list of the traits an ideal software developer would possess, which offered insight when analysing their professional virtues. A chat tool, which served as a non-stop discussion platform for the entire company, allowed me access to everyday discussions and provided material for field notes. Documents stored in the company intranet and organisation-wide emails describing company procedures and new development projects also served as research material. However, because this material was mostly produced by the management, it was always considered in light of what I had discussed with the software professionals and what I had seen in the field. Ten newspaper and journal articles about Vincit were used as material. Everyday observations were noted in my online or notebook research journals.

From the data covering everyday life—events, actions and speeches—an ethnographer chooses the relevant details and builds them into a story (Czarniawska 2008; Van Maanen 1988), interpreting how things happen and work in a particular organisation (Van Maanen 1995; Eriksson et al. 2008; Fletcher and Watson 2007; Watson 2000; Humphreys and Watson 2009; Van Maanen 2002). To create an understanding of the organization, I constructed stories about software professionals' work: coding and software development, the company and its history, customer project work, ways of pursuing personal dreams, the company's decision making and discussion culture (Ylén 2015).

Based on my preliminary field observations, professional agency was the starting point of this study. Since professional agency is simply part of the daily work routine, something that people do (Goller and Harteis 2017, this volume), this analysis was based on the manifestations of agency in the data. After gaining an understanding of a software professional's work at Vincit's, I systematically searched for situations where people exercise agency, making choices and determining their own work: dealing independently with challenging customer situations, choosing which technologies to use, deciding their own working hours, developing their professional skills, questioning company procedures and building new ones and so on.

Ethnographic research takes no standard form (Van Maanen 2006). A researcher must create a practice-based study and assemble a toolkit of internally consistent theories and methods (Nicolini 2009, 2012). Leaning on the practice-based approach presented above, in the first part of my analysis I examined these stories, looking to see where agency occurred. The manifestations of agency were divided into four categories: community decision-making, developing work procedures, one's own career and the software development work itself. In the light of the presented practice-based approach, these categories were interpreted as organisational practices enabling professional agency: democracy, experimentation, self-directed development and independent project teams.

After outlining these agency-enabling organisational practices, in the second part of my analysis I focused on the moral aspect, looking for central virtues. I reviewed the research material for stories that indicated any moral aspect of software

developers' work. I was looking for expressions of what the interviewed software developers considered as good, successful, inspiring or meaningful work, and on the other hand what they considered as bad, boring, difficult or challenging work. Rather than concentrating on company or management targets, I tried to develop a sense of the virtues, goals and aims of the professionals—what they described as good work. Finally, I studied the connection between agency, practices and virtues, using the research questions outlined in the following section.

15.2.4 Research Questions

This chapter examines organisational practices and professional agency from a moral perspective, focusing on the virtues of the professional practice: *How do organisational practices enable professional agency?* First, we need to determine *what agency-enabling practices exist in the organisation*. This question incorporates the central assumption that practices define professional agency—they either enable or restrain it (Eteläpelto et al. 2013; Henttonen and LaPointe 2015). Second, the question of *what kind of professional virtues these practices enable* allows us to see the connection between an organisation's practices and professional agency and permits us to reach the moral dimension of agency.

15.3 Practices Enabling Professional Agency

This section of the chapter presents the four identified organisational practices enabling professional agency in the software development organisation in this study: democracy, experimentation, self-directed development, and independent project teams. These practices are examined in relation to the software developer's professional practice: what goods and virtues are essential to the professional practice of software developers? What kind of professional agency does pursuing these goals and goods generate? Finally, we reflect upon the context in which software developers work: how the framework established by this context limits, yet at the same time enables, their professional agency. The identified organisational practices indicate an interrelatedness between professional virtues, agency and organisational practices. In the following sections these connections are explored further.

15.3.1 The Practice of Democracy

At the software house I studied, people actively take a stance on issues concerning their workplace, developing their work environment and habits together. *The practice of democracy enables professional agency in relation to the work community's*

decision making. Traditional managerial work has been abandoned; instead, the work is led by the current project team. In the software industry, it might be said that the bosses are the project's customer, its deadline and its budget (Damarin 2006; O'Riain 2010). Managerial structures are not necessary when agile teams answer independently to these work-led demands. Equality and teamwork are closely connected to the lack of hierarchy. As one of the project leads stated, "When the organisational hierarchy is flat, there's no need for you to stab your friend in the back to get a better position on the organisational chart, because there is no such chart".

The practice of democracy decentralizes power and responsibility and enables professional agency. As one of the software developers described, "We trust that people can use their common sense, so they are given the possibility to do so". An employee does not need to ask for permission and the company's "no-policy policy" encourages everyone to use their own discretion and individual solutions. While company management has the final say and there are certain corporate governance policies that must be taken into consideration, the practice of democracy shapes both work and management cultures at Vincit.

A transparent and open communications culture is essential to the practice of democracy. This enables professionals to influence and participate in the work organisation's decision making. At Vincit, there are several communication channels, meaning everyone has the opportunity to be heard. Almost all financial figures are available, and everyone is welcome at management and sales meetings. The management constantly urges the employees to speak up, and in turn, the employees demand participation and transparency.

This professional agency, enabled by the organisational practice of democracy, stems from the professional practice of software development and its goals and virtues. An important virtue for software professionals is *openness*, and this defines their professional agency. For example, thoughts on technologies or development processes are not kept hidden, but revealed in websites, blogs, and open source and code libraries. Software professionals' agency is guided by the ideal of open information—whether it relates to the tricks of technology or company's cost structure.

Another feature common to the professional practice of software developers is *equality*. In the software industry, the scale of technologies is so vast, and expertise areas so expansive, that anyone can be the best in a certain niche. Again, hierarchies are irrelevant; what matters is what is accomplished together. At a recruitment event, a student asking for a traineeship was told by an employee, still a student himself, "We do not take trainees but full members of the work community".

In this study, the software developers' goals of equality and of the sharing of information have instilled in them professional agency through the practice of democracy. Meanwhile, the practice of democracy has produced professionals who aim to maintain and further develop this culture based on openness and equality. The professional virtues and organisational practices seem to support and reinforce one another through professional agency.

15.3.2 *The Practice of Experimentation*

At Vincit the tools, models and procedures which support the work are constantly changing. There's no sense in describing a certain procedure in detail, because in a month it might no longer exist. Processes are constantly developed, after which people reflect on their work, then cooperate to improve it. *The practice of experimentation enables professional agency in relation to developing work procedures.*

The practice of experimentation enables software professionals to influence the development of working methods. This practice is related in this study to an essential virtue of the software developers' professional practice—*agility*. This ideal is embraced throughout the organisation, where people are used to having “no hierarchies or huge piles of rules”, and instead “can decide, react and act fast”. This mindset was described by a project lead as, “a culture of open-minded experimenting”:

At least in my own projects, if someone has an idea about how to do something differently when the current way isn't working, I'm like let's try, for a couple of weeks or a month to see how it goes, and then we can change it or ditch it.

Constant evaluation and consistent improvement are important goals in the professional practice of software development. Instead of comprehensive plans, agile software development methods are based on constant development, fast feedback, change and cooperation (Dybå and Dingsøy 2008; Iivari and Iivari 2011). Flexibility and cooperation are preconditions for *constant improvement* of both the product and the development process. For the software developers in this study, the connection between agile software development principles and the company culture is obvious, as one project lead stated:

We don't like planning too far ahead because if a bomb were to drop we would have to stick to the plan even though it would suck. It is maybe this, kind of like in this iterative development model that is prevalent in software development that we start with what we know, we know how to do that and the rest we leave aside and think about it later. Then we start doing, and fix the direction as we see how it goes.

In addition to coding, developing company procedures is important in the software developer's professional practice. Discussion is carried out through internal channels, and the information shared about new technologies and industry-related topics relates not only to daily tasks but can be seen as participating in the wider evolution of the industry. Professional agency in developing organisational procedures is building this company's professional practice into something unique. As one of the software developers stated with pride, “The company slogan was once, I don't know if it is anymore, “not another software company”. Yes, we challenge the conventions of the software industry and those cast-iron truths”.

Professional agency enabled by the practice of experimentation is based on the essential goals of software development professional practice: agility and constant improvement. When software developers have the opportunity to improve their work procedures in the organisation's practices, these agency-guiding goals remain present in their daily work and produce professionals who are committed to constant

growth and improvement. Organisational practices that enable professionals to work according to their professional virtues seem to reinforce agency and consequently increase employee satisfaction.

15.3.3 *The Practice of Self-Directed Development*

The philosophy of experimenting is also visible in the process of developing professionals' competence and well-being: there are no career paths, training packages or development discussions, but everyone pursues their own personal dreams and goals in their own personal ways. *The practice of self-directed development enables professional agency in relation to one's own career.* Because getting ahead in one's career is not about climbing the hierarchy ladder, it's up to the individuals where they want to go. Is your passion in programming or working with people, technical issues or project management? What would take you closer to your passions? Instead of a passive resource everyone has the chance to be—and if you want to develop, you actually must be—an active agent in your own career.

Software developers spend the vast majority of their time on current customer projects. There are ways to influence one's own projects, from wish surveys to participating sales meetings. But the project is always a perfect match to the employee's professional goals. In such situations, individuals must develop professional skills in other ways—anything from trainings to seminar performances, attending conferences abroad to writing the company blog. The practice of self-directed development takes into consideration the professional's career as a whole. It is not only about developing competence or one's career but also about promoting well-being. Examples of these include individual work time arrangements, in-house mentoring, professional coaching and well-being events.

The practice of self-directed development is closely related to *expertise*, a central goal of the professional practice of software development. In a fast-developing industry this means staying up to date, as technologies grow old. If an employee does not master the latest technologies, even decades of work experience can seem irrelevant. Working on a variety of projects and with different customers and technologies provides consistent opportunities to learn: “Your work is not just sitting there in front of your computer, staring at the same screen”. Such expertise ensures quality code and functional software, but especially for the software developers in this study this is an important virtue. They take pride in their co-workers' professional skills and find it inspiring to work with top-level experts.

In the professional practice of software developers, continuous competence development is necessary—even though pursuing top-level expertise is occasionally difficult. As one project lead said about his colleagues, people dare to boldly pursue things that have never been done before: “Everyone is ready to do stuff from different fields”, he said, and he has not heard, “I don't know how to do that”. He interpreted this as *passion*:

I think it is the word *passionate* that relates to this, that it comes through that, when you develop yourself and don't want to deliver bad results, and on top of that there is the will to learn. It is just through that; it has nothing to do with bonuses or stuff like that.

The commonly used attribute “passionate” in the employees’ titles on company’s business cards is not only empty words but an important professional virtue. The practice of self-directed development enables professional agency in relation to one’s career and competence. Accordingly, software developers’ motivation to learn enables the practice of self-directed development. Professionals pursuing top-level expertise develop their professional skills, and the practice of self-directed development that has emerged from the professional virtues in turn enables the passionate pursuit of expertise. Enthusiasm at work seems to stem from the fact that organisational practices enable professionals to work by their professional virtues.

15.3.4 The Practice of Independent Project Teams

From sales quotes to the release of a final product, software development projects form the backbone of everyday life for the software developers in this study. Thus it is here that professional agency is most relevant. *The practice of independent project teams enables professional agency in relation to working.* In the spirit of the practice of democracy, in project work everyone also holds power and responsibility. Team members are often involved before the project officially begins, supporting the sales team with quotes and workload estimates. During the software development project, the team is in constant communication with the customer. Sometimes the customer provides specific details about what is needed, other times everything is created from scratch. It is the project lead’s responsibility to keep to the schedule and stay within the budget—or to renegotiate these limitations.

Professional agency in relation to the content of the work is also important. The project team itself works as the quality controller of the software and code. The software developers aim at reaching the best possible outcome within the schedule and budget. Teams develop their own testing methods and they evaluate the condition of the code on a regular basis. Technical challenges are solved together, expertise outside the team is utilized and if possible, the team experiments with new technologies and innovative solutions.

The practice of independent project teams enables software developers’ professional agency: “You can do and express yourself” through daily tasks. This was emphasized in some developers’ stories, who at other workplaces had experienced how “you could pull the short stick” or find yourself doing “odd jobs”:

Every employee is a very big wheel in the machine where we are. There are no small wheels who do insignificant work; everyone has quite a big role here. Everyone is doing quite big stuff. In that sense everyone is significant because everyone is very good at their work; there are no freeloaders at all.

Those in the industry see software development as creative work: passion, play and art at its best (see Himanen 2001). A central virtue of the professional practice, enabled by independent project teams, is *freedom*. A professional defining one's own work is not a faceless cog in an assembly line, but a professional agent. Passionate software developers require freedom to find meaning in their everyday work—whether through problem solving, the aesthetics of code or improving the world with technology.

When the practices enable professionals to work in a manner they feel is best (of course within the frames set by the project), good code is inevitably born. Creative solutions and functional software combine to create *quality*. For the software professionals in this study, quality is a central goal. When they mock their competitors' inferior software, they demonstrate their own aim: quality work to be proud of. Although a survey found 100% of their customers would recommend Vinct to their colleagues, the software developers had difficulty finding examples of successful projects—the quality criteria is so high that even “good” is not enough.

Quality is central to both software developers' professional practice and the business itself. Quality software fulfils the company's goals of happy employees and happy customers. Democratic culture, constant development, top-level expertise and professionals' freedom to work enable the best possible quality. Again, professional virtues manifest themselves in professional agency within the organisational practices. This in turn seems to support employee well-being and satisfaction.

15.3.5 *The Customer Project as the Framework for Agency*

The practices enabling software developers' professional agency were described above. But are the possibilities for agency really as wide as a look at the organisation's practices suggest? The workday atmosphere does not always consist of pure freedom and harmony—projects are not easy, the work is not necessarily enjoyable and sweating and swearing cannot always be avoided. Even though the possibilities for agency would be unlimited within the practices of the organisation, the customer project sets its limits. The software industry looks free and autonomous, but in the end, everything happens on the customer's terms (Damarin 2006; O'Riain 2010). At the organisation in this study, the 100% money-back customer satisfaction guarantee places a great deal of pressure on the project and its workers.

Despite this constrained professional agency, most of these software developers find their work meaningful and satisfying—at least if we believe the company's internal measurements and the Great Place to Work® surveys. A possible explanation can be found in the professional practice of software development. Especially in the business of tailored software development services, the limits of time and money are an essential part of the industry: as the company CEO emphasized in an introduction session for new employees, “We won't provide the best value without constraints”. Whereas a skilful coder focuses on coding, a skilful software developer creates the best possible value for the client using the time and money avail-

able. As one project lead stated, it is “a lousy job” to have to worry about the budget and everything else, but “on the other hand, that’s why this is so fun”. Another project lead remarked:

I think that the best project experiences have been related to a difficult situation that we have overcome, quite often, so...Any coder can write their thing in easy circumstances, but maybe it takes more expertise if it’s a really difficult situation, a difficult place. Then you can use your expertise and get to the finish line as a winner.

Within the framework of the customer project, software developers are able to display and develop their expertise. While not all situations allow for choice or decision-making power, there is always room for professional agency. If it looks as though the budget will not be sufficient, often this can be negotiated with the customer. If the schedule does not allow enough time for a perfect result, the most important features to finish with the time at hand can be defined. Within the framework set by the customer project, Vincit’s organisational practices enable as much professional agency as possible. Professional agency, stemming from the virtues of the professional practice of software developers, culminates in the quality of the finished product. This leads to a happy customer—and of course to a happy employee, practicing agency according to the virtues of professional practice. Maybe professional agency is not all about being free as a bird, but rather being free to be a virtue-driven, problem-solving professional within the limits set by the profession’s work context.

15.4 Space for Professional Agency

The previous section focused on software developers’ work and the connections between organisational practices, professional virtues and agency. This section adopts a more practical perspective, aiming to contribute to the discussion of promoting meaningful working life by supporting professional agency. This is done by examining the organisation as a supporter of professional practice and reflecting upon how agency at work can be promoted by focusing on professional virtues instead of managerial goals. What if the main objective of a work organisation was to support its professionals’ practice, thus opening a discussion on professional virtues and enabling good work?

15.4.1 *How an Organisation Can Support Professional Practice*

Since its early days, including the research period, Vincit has scored high in both customer and employee satisfaction surveys, while the company’s finances are sound. It seems that the goals of the employees and the company are in harmony

with each other; even without bosses everyone is moving in the same company-advantageous direction. From a critical perspective, a question can be raised as to whether this is only a sophisticated form of managerial control, where the hearts and minds of the employees are tied to the company's interests via company culture. (Covaleski et al. 1998; Fleming and Spicer 2006; Fleming 2013; Grey 2005; Kunda 1992).

In strong cultures such as these, members are often required to adapt their personalities to suit an unquestioned authority, and no alternative perspectives are allowed (Fleming 2013). There often exists some form of resistance, from cynicism to visible rebellion (Fleming and Spicer 2006). Unless open, development-oriented critical discussion counts, such phenomena are not usually seen at the organisation in this study. First, the notion of a good software developer attached to the company culture stems mostly from the virtues of the professional practice, not from managerial goals. Second, questioning and challenging the organisation's methods are encouraged. A balanced power structure, equality of all perspectives, decision-making methods enabling critical discussion and an encouraging culture are all characteristics of an organisation taking employee involvement seriously (Beadle and Moore 2011).

As the findings presented in this chapter show, work organisation plays a central role in creating possibilities for professional agency. Practices are always part of a bigger entity that MacIntyre (1987; see also Beadle and Moore 2011) calls institution. In this research, the institution is Vincit, a company that, as is characteristic for an institution, aims at making a profit and surviving in the competition in order to secure its existence—and the existence of the practices it houses. Institutions are always inevitably interested in money and power, which produces a contradiction between profit-oriented competitiveness and the ideals of professionals' practices that colours the everyday life of organisations. (Beadle and Moore 2011; MacIntyre 1987).

This natural tension may lead to the goals of an institution overpowering the virtues of professionals' practices. However, the case studied shows that this is not inevitable. Although profit, power and status of the company are both necessary and beneficial, they can be seen as a means for sustaining and developing professional practice rather than merely the end goal. This kind of "virtuous institution" sets fostering the practice and the practice's goals as its primary task (Beadle and Moore 2011; MacIntyre 1987). This logic is summarized by the company CEO's statement: "Growth is a shitty goal but rather a consequence of customer and employee happiness"—in other words, doing things right. Growth and reputation are seen not only as a means to success but also as an opportunity to influence the software industry and its practices.

At Vincit, this environment is supported by the strong connection between the organisation's and professionals' practices. The organization's practices stem from the professional practices enabling the virtue-driven professional agency of software developers, which in turn sustains and strengthens the practices that support the professionals' ideals. Henttonen and LaPointe (2015) use the concept of space to describe the possibilities of agency within the practices of a given setting, a

specific workplace for instance. Instead of a managerial hierarchy, the workplace is seen as a cultural entity, where practices and agents interact. The practices of the organisation in this study enable working conditions that emphasise professionals' possibilities, thus making space for professional agency.

15.4.2 From Managerial Goals to Professional Virtues

While ethnographic or practice-based research does not aim at producing generalizable knowledge, the findings in this chapter can help us understand the world outside the community studied (Eriksson and Kovalainen 2008; Giddens 2006; Orlikowski 2010). Discourse on employment demonstrates that there is clearly a need to create new methods for work, but Henttonen and LaPointe (2015) argue that often the offered solutions remain as burdensome transformation projects or development efforts distant from daily work. Instead of creating “more innovations, more and more effective management and new best practices”, they call for a working culture that challenges the managerial way of thinking, “where we get back to basics and give the professionals the possibility to do their work properly, according to the professional ethics included in their professional practice” (p. 73; see also Järvensivu 2010.) This chapter has the potential to contribute to this discussion on challenging the traditional workplace culture.

The results of this study show that the practices enabling professional agency stem from the professional practices of the employees rather than from managerial goals. This perspective challenges the traditional, managerial perspective emphasizing measurement and control. Management based on formal leadership or supervisor status is only one way to organise a company, while the workplace culture in this study demonstrates there are new, more liberating ways to organize work (Alvesson and Spicer 2012; Spicer et al. 2009; Henttonen and LaPointe 2015; Räsänen and Trux 2012). A new style of management and leadership is needed where professionals are seen as influencers and agents of their own work (Eteläpelto et al. 2011a; Giddens 2006).

However, it requires courage to open workplace practices to common discussion and development—professional agency can manifest in both constructive ideas and unproductive criticism (Eteläpelto et al. 2013). Yet this study demonstrates that an open, reflective discussion culture can be a fruitful starting point for developing work practices. When employees regularly evaluate and reflect upon their work, they learn the values and assumptions that guide their colleagues' actions (Cunliffe 2004; Räsänen and Trux 2012). This method creates a foundation upon which to implement ways of working that stem from employees' goals and ideals.

Instead of busy work, workplace development could be targeted towards creating spaces for professional agency. Support can be found in questions that served in this chapter's study on software developers. What is the everyday work of the professionals like? What kinds of goals and notions of good work are there in the professional practice? What kinds of practices guide their daily work? Are these practices

enabling or restricting professional agency? How could these practices be transformed into supporting the employees' goals, and, in turn, what kind of practices could be built from their goals? What are the realities the organisation is facing and how do they affect professional agency? When an organisation comes together to discuss these questions, it moves one step closer to creating space for professional agency—a work organisation where it is possible to do self-directed, good and meaningful work.

15.5 Conclusion

This chapter focused on the organisational practices and virtues inherent in software developers' work, making use of an ethnographic study that approached professional agency from a practice-based perspective. While asking *how the organisational practices enable professional agency*, the questions, “*What agency-enabling practices are in the organisation?*” and “*What kind of professional virtues do these practices enable?*” were discussed. As a result, four practices that enable professional agency were identified: democracy, experimentation, self-directed development and independent project teams.

A Finnish software company, Vincit, served as the research context. Although this organisation received awards recognizing it as a quality workplace, this chapter emphasizes that the pursuit of meaningful work does not rely solely upon a set of universal best practices, but incorporates the virtues important to a particular group of professionals in a particular organisation. The focus on the moral dimension of work challenges us to think about professional agency in relation to the virtues of a professional practice: different employees have different perceptions regarding what it means to do “good work”.

Because this research was narrowly focused, it would be interesting to study organisational practices and professional virtues and agency in other settings, focusing on different professions and work environments. What kind of organisational practices enable professional agency for nurses, teachers or welders, and what professional virtues guide this agency and the development of these organisational practices? A wider perspective on the themes studied would provide valuable insight, as ethnographic results are never generalizable as such.

Meanwhile, we should reflect critically on the actual findings of this ethnography. It is challenging to interpret a continuously changing organisation: the company in this study is constantly growing, and other professional groups are beginning to form alongside the software developers. In addition, we can also ask whether it makes sense to analyse the software developers in this study as a group, as there are different individuals with differing virtues within this seemingly coherent group. However, the data—consciously constructed to focus on software developers with diverse roles and backgrounds—supported the presented virtues as being common to the perceived professional agency and professional practice.

Another challenge presented by this study was the research setting; specifically, my double role as researcher and employee. As described in the methodology, I did my best to reflect and elaborate upon these roles and how they influenced the decisions made during the research. My insider perspective was beneficial when gathering the data, but an outsider's view was necessary when performing the analysis.

This chapter examined how organizational practices enable and/or constrain professional agency and virtues and showed how, in the context of the organization in this study, the practices were strongly enabling. As this workplace has been recognized for employee well-being and employee satisfaction, the findings of this study suggest that one element of a great place to work is the fact that the organisations' practices provide space for virtue-driven professional agency and that these organisational practices have formed with respect to professional virtues.

To create a great workplace, organisations should see themselves as spaces for professional agency, enabling such work conditions that employees' professional virtues are able to guide their work. As two of the software developers stated, the meaningfulness of everyday work is the starting point of employee well-being. Everything else is "icing on the cake"; "Anyone can place that foosball table in the office corner but that is not the same thing".

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Chapter 16

Researching Teachers' Agentic Orientations to Educational Change in Finnish Schools

Antti Rajala and Kristiina Kumpulainen

16.1 Introduction

Recent social, economic, and technological developments are challenging education all around the world. As there are no simple solutions, there is a great deal of debate concerning how schools should be defined and developed in this century to support social justice, as well as students' personal growth and working life skills. Schools and education systems are hard-pressed to deal with the often-conflicting demands contemporary knowledge societies pose for learning and providing education (Erstad et al. 2016; Kumpulainen et al. 2011).

In Finland, changing societal demands are being addressed by key governmental projects, including the introduction of a new core curriculum for preschool and basic education (FNBE 2014). The new core curriculum emphasises the development of students' transversal competencies including multiliteracy, digital competencies, interaction and expression, social participation and influence, critical thinking skills and learning-to-learn as well as working life skills, and entrepreneurship. In addition, the core curriculum recommends learning environments and pedagogies that are based on experiential, integrated, and student-centred learning, modelling real-life inquiry, and problem-solving with relevant social and material resources. All these changes call for major reforms from how education has been delivered in the past.

One response to the demands posed by the knowledge society has been the global trend to enact school reforms by reducing teachers' opportunities to take control over their work (Ravitch 2011; Biesta 2009). These trends see *teacher agency* primarily as a weakness within the operation of schools and seek to replace it with evidence-based and data-driven approaches as a means to ensure the efficient and equal provision of quality education across schools (Sahlberg 2011). A common

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problem with the implementation of such educational reforms, however, is that it overlooks a broad range of concerns and issues that teachers need to manage in their everyday work while adapting to change, such as addressing diverse student needs (Kennedy 2005; Rajala 2016).

In Finland, the global reform movements in education have not affected the core values of trust-based governance, where teachers are given autonomy to design their teaching and assessment based on their professional knowledge and decision-making (Sahlberg 2011; Simola 2015). In fact, when implementing educational reforms, Finland asks for *teacher agency* in making personal sense of the reforms and putting them into action at the local level. For instance, as the result of the Finnish new core curriculum, teachers are now invited to make local decisions about the educational use of digital technologies and tools as part of their instruction. The same applies to interpreting and applying new learning materials and learning environments that are being introduced to schools as part of the new curriculum. Overall, these changes call for *teacher agency* in making personal sense of new social and material arrangements and resources for teaching, learning, and revisiting their professional competencies and identities.

Informed by sociocultural theorising (Lipponen and Kumpulainen 2011; Emirbayer and Mische 1998), our chapter focuses on understanding teachers' agency in interpreting and implementing educational reforms. *Teacher agency* refers to teachers' *agentic orientations* that are displayed in their accounts of their practice. In particular, *agentic orientations* are indicated in teachers' critical evaluations and attempts to reconstruct their work conditions. We do not conceptualise agency as a personal feature of the teachers but in terms of what they do, that is, as an interactional process (see also Goller and Harteis 2017, this volume; Biesta and Tedder 2007). We hold that *teacher agency* matters in *educational change* efforts because it is teachers who enact reforms in the daily practices of their classrooms and school communities (Biesta et al. 2015).

Not only do we regard *teacher agency* as an important element in enacting *educational change* but also as an integral part of teacher professionalism entailing teachers' negotiation of broader educational visions and meanings that give long-term purpose to their work (Priestley et al. 2013; Toom et al. 2015). Moreover, *teacher agency* is related to organisational commitment, work satisfaction and well-being, and professional identity negotiation (Vähäsantanen 2015; Vähäsantanen et al. 2017, this volume; Harwood and Froehlich 2017, this volume). Thus, it is important to understand the dynamics of *teacher agency* and the conditions that contribute to its emergence, particularly in times of *educational change*.

This chapter will discuss our research on *teacher agency* in interpreting an *educational change* effort within the context of two Finnish schools. Specifically, we examine the display of *agentic orientations* in the teachers' accounts as they reflect on the uptake of a new digital learning environment (the FUSE Studio, Stevens et al. 2016) at their schools as they adapt to a new core curriculum. We pose the following two questions for our inquiry:

- What kind of *agentic orientations* to *educational change* do teachers display while they reflect on the uptake of a new learning environment in their schools?
- How are different *temporal dimensions of agency* displayed in the teachers' accounts?

The following section will briefly review some recent research on *teacher agency* and *educational change*. Next, a socioculturally informed conceptual framework for researching teachers' *agentic orientations* towards an educational reform within a temporal framework will be presented. Then, we will describe our empirical study situated in two Finnish comprehensive schools that were in the process of *educational change* due to the recent adoption of new curriculum and national efforts to digitalise education. The findings section will provide illustrative examples from our teacher interview data which demonstrate the dynamic processes through which teachers manage change and continuity and the meaning of *teacher agency* in this process. Our analysis revealed four *agentic orientations* with distinct *temporal dimensions of agency* that the teachers displayed towards the *educational change* efforts their schools were undergoing: *practical evaluative*, *reproductive*, *critical projective*, and *creative projective*. These *agentic orientations* and their temporal features unpack the dynamic processes of how teachers manage educational reforms to address their personal and local needs (see also Hubbard et al. 2006). We conclude the chapter by discussing future directions for research on *teacher agency* amid *educational change*.

16.2 *Teacher Agency and Educational Change*

Teacher agency has been proposed as an important mediator of *educational change* (Engeström 2011; Priestley et al. 2012; Vähäsantanen 2015). Research on *teacher agency* has problematised some core notions of *educational change* literature, such as the desirability of high fidelity when implementing change programmes. For example, Buxton et al. (2015) listed several problematic assumptions in approaches that rely on fidelity of implementation, such as the existence of a clear a priori agreement about appropriate ways of implementing intended practices and the feasibility of a predictable path from teachers' participation in professional development workshops to intended changes in classroom practices. Instead, they used the notion of multiplicities of enactment to reframe fidelity of implementation to emphasise teachers' agentic translation of professional learning into professional practice. Similarly, Priestley et al. (2012) concluded that narrow notions of fidelity to policy intentions disregard a wide variety of ecological possibility and constraints that impact translations between policy and practice.

The extent to which teachers can achieve agency in their work varies from context to context based upon certain environmental conditions of possibility and constraint (Priestley et al. 2012). Even in restricted settings characterised by accountability and control mechanisms, teachers can achieve some extent of agency

(Robinson 2012; Buxton et al. 2015). Priestley et al. (2012) showed how teachers created a space for their agentic response to the constraints of traditional arrangement that put an emphasis on student attainment. The teachers' *agentic orientation* could be characterised in terms of the tension between educational ideals and actual constraints of the work. Robinson (2012) showed how collegial relationships enabled teachers to achieve agency to adapt and adopt policy requirements to fit some practices and reshape others.

Teacher agency is known to take varied forms, and it is not only characterised by behaviours and outcomes that are intended or deemed desirable by researchers or policymakers. In Vähäsantanen's research (2015), vocational teachers' professional agency was manifested through stances and activities that varied from reserved and resistant to progressive and actively engaged in the reform. Also, Sannino (2010) showed that a teacher's resistance to intervention indicated her experience and work with conflicting demands in teaching. The teacher's expression of resistance was a first step towards achieving agency to overcome the critical conflict that the teacher experienced in her work and committing herself to mastering her working conditions.

In accordance with this earlier work, our research also recognises the multiple dimensions of *teacher agency* and how these can advance and hinder *educational change* efforts. Specifically, we focus on how teachers' *agentic orientations* towards an educational reform are composed of routine, projective, and judgemental dimensions where the past, present, and future interact (Emirbayer and Mische 1998). Thus, our approach underscores a temporal perspective to researching *teacher agency* and *agentic orientations* in the context of educational reform. We argue that a temporal approach is vital for developing a more nuanced understanding of the meaning-making processes teachers undergo during their possibly agentic adaptation to education reforms (see also Evans 2017, this volume). The findings will contribute to present-day knowledge of the resources and support mechanisms that mediate teachers' work and agency in times of *educational change*.

16.3 A Conceptual Framework for Researching *Teacher Agency*

The conceptual framework of our research builds on the sociocultural theorising in which *teacher agency* is conceptualised as an ongoing process that is contextually and historically situated (Lipponen and Kumpulainen 2011; Emirbayer and Mische 1998; Engeström 2011). Rather than regarding agency as residing in individuals, this framework views agency as an interactional process resulting from the interplay between individual efforts, available resources, and contextual and structural elements (Biesta and Tedder 2007). In other words, agency is seen as an interactional achievement that is constructed relationally in dialogue with immediate as well as temporally distant interlocutors and contexts (Leander and Osborne 2008). In this

conceptualisation, agency and structure are not opposed but presuppose each other in a dialectical relationship; structures shape people's agency, and conversely, people's agency reproduces or transforms structures (Sewell 1992; Giddens 1984; Emirbayer and Mische 1998).

In particular, following Emirbayer's and Mische's (1998) seminal work, we argue that to understand agency, it is crucial to account for the changing temporal orientations of the situated actors. Accordingly, we conceptualise agency as

the temporally constructed engagement by actors of different structural environments—the temporal-relational contexts of action—which, through the interplay of habit, imagination, and judgment, both reproduces and transforms those structures in interactive response to the problems posed by changing historical situations. (Emirbayer and Mische 1998, p. 970)

As social actors respond to emergent events, they must continually reconstruct the past from the perspective of the present. They also formulate projects in view of the future and realise them in the present, with unpredictable outcomes.

This conceptualisation situates agency in a temporal framework and disaggregates it into its constitutive dimensions: iteration, projectivity, and practical evaluation. These three elements refer to different *temporal dimensions of agency* towards the past, future, and present, respectively. The three *temporal dimensions of agency* are briefly summarised below (for more details, see Emirbayer and Mische 1998).

The iterative dimension accounts for an *agentic orientation* towards the past. It refers to “the selective reactivation by actors of past patterns of thought and action, as routinely incorporated in practical activity, thereby giving stability and order to social universes and helping to sustain identities, interactions, and institutions over time” (Emirbayer and Mische 1998, p. 971). The iterative dimension of agency posits agency in even the most routinised, prestructured forms of social action (Biesta and Tedder 2007). Thus, teachers who defend traditional ways of working and resist reforms are seen to be agentic in upholding the stability of social practice.

The projective dimension accounts for an *agentic orientation* towards the future. It refers to “the imaginative generation by actors of possible future trajectories of action, in which received structures of thought and action may be creatively reconfigured in relation to actors' hopes, fears, and desires for the future” (Emirbayer and Mische 1998, p. 971). For teachers, the projective dimension of agency is evident in the short- and long-term educational purposes and aspirations that give meaning and direction to their everyday work (Biesta et al. 2015). The projective dimension also addresses the imagination of alternative pedagogical arrangements.

The practical-evaluative dimension accounts for an *agentic orientation* towards the present. It entails making “practical and normative judgments among alternative possible trajectories of action, in response to the emerging demands, dilemmas, and ambiguities of presently evolving situations” (Emirbayer and Mische 1998, p. 971). The practical-evaluative dimension of agency is evident in teachers' problem-solving and deliberation in tackling emergent events and obstacles in their everyday practice. In all, the temporal framework of agency helps direct attention to how individual teachers assemble their *agentic orientation* to their work by relating to

their iterational (past), projective (future), and practical-evaluative (present) contexts.

There is little empirical research on teachers' agency in a temporal framework. The most relevant research for our work is from the *teacher agency and curriculum change* project conducted in primary and secondary schools in the UK in 2011 and 2012 (Priestley et al. 2012, 2013; Biesta et al. 2015). This research project focused on experienced teachers' achievement of agency in their everyday work during the introduction of Scotland's Curriculum for Excellence in which teachers were explicitly positioned as agents of change.

The findings from the UK project illuminate the dynamics of teachers' agency in terms of an interplay between the past, present, and future dimensions of agency. Priestley et al. (2012) showed the relevance of the iterative dimension, accounting for the formation of teachers' variously traditional or progressive educational aspirations. Their findings also show tensions between the projective and practical-evaluative dimensions of agency, which were evident in the difficulties of translating educational aspirations and ideals into practice within working conditions framed by predefined assessment and school quality assurance frameworks. Biesta et al. (2015) found that the teachers were primarily oriented towards the here-and-now implementation of current and recent policies and appeared to lack projective agentic *orientations* stemming from reflections about the wider purpose and meaning of schooling. Similarly, as in Priestley et al.'s (2012) study, the authors attributed the teachers' relatively weak future orientation to the systems of accountability that were in place in the school systems. These systems provided little room for *teacher agency*.

The research conducted during the teacher agency and curriculum change project creates an interesting point of comparison to the study discussed in this chapter. This study will also investigate teachers' *agentic orientations* towards an educational reform within a temporal framework. However, in contrast to the UK education system, the Finnish system represents a cultural setting with a preference to teacher autonomy and trust in teachers' professionalism (Sahlberg 2011). This stated preference is supported by educational policy that grants autonomy and accountability to municipalities and their schools to develop their own strategies and ways to implement educational reforms.

16.4 Study Description

The empirical data of our research stems from two Finnish comprehensive schools run by the city of Helsinki. The city of Helsinki is currently in the process of equipping all its schools with advanced digital technologies due to new curriculum requirements and national efforts to digitalise education. School 1 is a primary school with 251 students (grade levels 1–6, aged between 6 and 12 years) and 16 teachers. The school is situated in a suburb of Helsinki. School 2 is a comprehensive school providing both primary and secondary level education. It hosts 535 students

and 28 teachers at the primary level. The school is situated close to the city centre of Helsinki.

Both school communities have recently (in autumn 2016) introduced a new learning environment called the FUSE Studio (www.fusestudio.net) as a response to the digitalisation efforts of the city and new Finnish core curriculum requirements. The FUSE Studio (Stevens et al. 2016) is a digital platform offering students various STEAM (Science, Technology, Engineering, Arts, Mathematics) challenges that level up in difficulty. The challenges have been carefully structured to introduce students to new ideas and support them through more complex iterations of those ideas. Students can choose what challenges they want to work on, when, and with whom based on their own interests. They can choose to work alone or with peers. There is no formal grading or assessment by adults. Instead, using photos, video, or other digital artefacts, participants can document completion of a challenge to unlock the next challenge in sequence.

This chapter's primary research data comprises 23 teachers' accounts derived from semi-structured interviews conducted after a 2-day in-service programme on the FUSE Studio concept (in spring 2016). The interviews were held at the teachers' own schools on a one-to-one basis. The interview questions addressed the following themes: the teachers' impressions and feelings about the FUSE Studio, FUSE students, FUSE and pedagogy, school culture and leadership, and the curriculum reform. The teacher interviews lasted approximately 30–45 min each. Each interview was audio-recorded and transcribed. The interview data were analysed using qualitative content analysis (Kvale and Brinkmann 2009). Informed consent was obtained from all research participants. Moreover, to protect anonymity, all names are pseudonyms.

In the analysis, we identified passages in which the teachers displayed *agentic orientations* towards the FUSE Studio. *Agentic orientations* were indicated by critical evaluations or attempts to reconstruct one's work conditions. We also took note of the *temporal dimensions of agency* (iterative, projective, practical evaluative). The iterative dimension was indicated by teachers' accounts of preference for routine and habitual ways of working and the significance of past experiences for current ways of working. The projective dimension was indicated by teachers' accounts that referenced educational ideals or future events. The practical-evaluative dimension focused on considering the pressing here-and-now realities of the school and local context in the implementation of educational reform. Finally, we synthesised our analysis in terms of four specific *agentic orientations* to the *educational change* in which the different *temporal dimensions of agency* were invoked and interacted in specific ways. The next section will illustrate the analytic categories in more detail.

The data of four teachers provide rich illustrative cases of their display of *agentic orientations to educational change* within the context of the FUSE Studio implementation. These examples have been selected for their illuminatory capacity rather than for their representation of all the teachers.

16.5 Findings

Collectively, our analyses revealed four different *agentic orientations* in the teachers' accounts while interpreting the *educational change* taking place in their schools. We have named these *agentic orientations* towards *educational change* as follows: (a) *practical evaluative*, (b) *reproductive*, (c) *critical projective*, and (d) *creative projective*. In each of the orientations, the different *temporal dimensions of agency* (iterative, projective, practical evaluative) were invoked and interacted in distinct ways.

Next, we will discuss these findings more closely and consider what these *agentic orientations* revealed about the ways in which the teachers managed *educational change* and how they accommodated institutional and personal needs in this process.

16.5.1 *Practical-Evaluative Orientation to Educational Change*

Kalle's interview was chosen to illustrate the practical-evaluative orientation to *educational change*. Kalle is a class teacher who displayed a generally positive orientation towards the new FUSE Studio digital learning environment but was concerned about its feasibility, given what he perceived as students' lack of basic skills in using digital devices and taking responsibility for their learning. The practical-evaluative dimension of agency was dominant in the interview account due to Kalle's emphasis on the work needed to adapt the FUSE Studio to the practical reality of the school and the demands posed by the students' lack of skills and motivation.

Kalle described himself as a pioneer in adopting a digital learning approach in his teaching:

Excerpt 1

Kalle: Because I have a background, I have those mini-laptops. They are now five years old. I've been using them for so long, and then I was [unclear]. I made many things in the Fronter environment. I feel that I was already there. Well, I am not saying that I was in the top league but nearly there, doing things. We made a lot of collective things in Fronter, and then we had the laptops, and we made role-playing games and other things.

Upon changing to the current school, he was shocked to realise that his teaching approach that worked well in the previous school seemed to be inadequate for the students he was currently teaching, as illustrated in the following excerpt.

Excerpt 2

Kalle: I had twenty children from the neighbourhood that lived in privately owned houses with both parents, and it [Kalle's teaching] worked well like "the toilet in the train", and then when I started in this school and became a teacher of the fifth grade, and I had just worked with the fifth and sixth graders and I thought that I will just continue the same, and then it didn't work out that well. It was not the same. So, that yes we can do it, and that I'll do more. The differences were so massive, so that the good ones [students] were

really good, but the weaker ones [students] were really weak...Here then we have the equipment, and if the laptop is left at home, and then it is difficult. So what can we do since we don't have that and other things. What I mean in conclusion is that for this school, since there are many diverse kids and then we start to use a teaching style that is based on conducting project work and then at the same time concentrate on the discipline matters so that you do not know how it works out overall. Sure, if we manage to create a good feeling, and then you have this and other things, it could well work out, but with us, it doesn't work that way. I don't know what it takes.

In the excerpt, Kalle suggests that the different socioeconomic and cultural backgrounds of the students in the current school compared to the previous school imposed a significant barrier for him to continue using the pedagogical approach related to digital tools. In the current school, there were a lot of problems in his use of this approach, related to students' negligence and disciplinary issues. Here, we can see an interesting interplay between the iterative and practical-evaluative *temporal dimensions of agency*; the present conditions of the school where Kalle is working force him to question and adjust his habitual teaching approach that originated in his work in the previous school. Thus, agentic work is needed for him to contextualise his past modes of working to present conditions.

Kalle also stressed that in implementing the FUSE Studio, teachers should consider the reality that – contrary to the common discourse of children as capable dignitives – many students lacked even basic skills in using digital devices.

Excerpt 3

Interviewer: Do you think FUSE fits with all students or for some better than others?

Kalle: We talk about dignitives and so on, and it should be like that and it is not, that there is from that on, that I have said it so many times. So that if I have twenty-two kids, there are at least five of those when we go somewhere, and there is a website we should go, that is the line for the address, it is not a google search window or alike and that is the address line. That it is there where you insert the address, and it goes to that address what has been written there, and if it is correct, and if you write in the Google it is little bit different thing than the address line. This is the address line and from that on. So that it is these kind of things we begin and then with them...I noticed that this is not going to work. You cannot even open the program in practice. That it is pretty limited what they can use. That it has been better in the past, I would say, compared to the present situation. So that it is my gut feeling, that it's really great, but not many will do such things that you really. That I am scared since a way there is the core curriculum, and everyone is going to that direction that you search for information and that you can evaluate its reliability and else. Well, okay, it needs to be taught, but it is at such a weak level.

In this excerpt, Kalle reported that while the hands-on tasks of the FUSE Studio might be motivating for some students, they nevertheless required basic skills in using digital tools and taking responsibility for one's own learning that he perceived many of his students to be lacking. By relating a concrete example of similar ways of working, Kalle critiqued the curriculum reform as a whole as being based on a false understanding of the students. In other words, he considered that the practical realities of schools were not adequately addressed in the curricular visions. Elsewhere in the interview, Kalle reported that he was concerned about whether the

FUSE Studio tools, including the small parts, would stay in good enough order to be usable, given the negligence of the students in the school.

In his critical reference to the curriculum reform and its visions that relied on the notion of active students, the projective dimension of agency was salient in Kalle's orientation. However, the dominant *temporal dimension of agency* Kalle displayed in his orientation to the FUSE Studio was the practical-evaluative dimension. This dimension was evident in the strong emphasis on the work needed to contextualise the past habits and future visions to the present-day practical realities and dilemmas.

16.5.2 Reproductive Orientation to Educational Change

Anne's interview illuminates the display of the reproductive orientation to *educational change*. Anne is a physics and chemistry teacher teaching in the lower secondary grades. Anne's *agentic orientation* to the FUSE Studio can be characterised in terms of a reserved stance. She saw that the pedagogy associated with the FUSE Studio limited her opportunities to foster students' conceptual engagement and learning in chemistry and physics. For once, she was disappointed that the FUSE Studio did not involve any challenges in chemistry. Moreover, for her, the pedagogical principles of the FUSE Studio that centred on students' choice and interest-driven learning appeared to result in a loss of control that was necessary to guarantee adequate conceptual learning. The reproductive orientation that she assembled as a response to her interpretation of the FUSE Studio revolves around the iterative dimension of agency. This orientation was evident in her plan of reproductive adaptation of the FUSE Studio that would enable her to reproduce her habitual way of working by limiting the degrees of freedom for the students.

In the following excerpt, Anne describes how she planned to make use of the few FUSE Studio tasks that resonated with the goals of the physics curriculum.

Excerpt 4

Anne: I want to try the physics side with secondary school students.

Interviewer: What is there in the physics side that probably inspires students?

Anne: Namely that, that, that energy-thing. There was that, that roller coaster (I: Yeah, there was) It fits nicely with the topics of the eight[h] grade.

I: Yeah, why, why do you think this type of task is good or...

Anne: No, but they are authentic. So that it is not just a calculation task or a theoretical thing in the classroom, but they could really try it out. How it is built, and what kind of results you can get from it.

I: So, is this typical, let's say, in your teaching? That you build something like this, or is it more like this as you said a theoretical thing in the classroom?

Anne: We surely do these types of experiments if possible...tasks. What one can do, since the time is always limited, unfortunately. So that we cannot do everything, but we'll try as much as possible.

The excerpt shows that Anne saw the FUSE Studio as potentially enriching her physics instruction by providing ready-made tasks that involved hands-on

experimenting with materials. Her responses indicate that designing such tasks was not always possible in the given time constraints.

In the following excerpt, Anne elaborates on her plan for using the FUSE Studio.

Excerpt 5

Anne: To my mind, I mean us, the folks in our school disagree whether all tasks are open always or whether we should limit the tasks according to age-level and so forth. I don't know.

I: What's your opinion to this?

Anne: I think, it should be like this. That there are certain packages for certain age-level.

I: Okay.

Anne: Otherwise it can easily happen that when you have them all, and everyone wants to print with a 3D-printer, they will work on the same thing. That they can just print a keyring or what was it.

I: Okay. What's problematic with it? I'm not challenging you, I'm just asking since I want to learn from your thinking. Although it may feel self-evident, can you nevertheless let me know what is problematic in that the students would continue doing the same thing?

Anne: Since not all are interested in the same things. Some do tasks that are as easy as possible. And maybe it's such a fun thing, that you get a kind of material artefact after the project. I, I don't know, I...

...

Anne: It is up to the teacher in the sense that I will choose it, that one theme. What we will go out there to experiment and research. But, there, that, that, I will not teach by the hand but there they can really investigate it, and then we jointly reflect on it and add theory-background there as well.

In this excerpt, Anne explains that her approach to the FUSE Studio involves disregarding its major design principle, namely, students' choice about which challenge to work on. Instead, she plans to effectively reduce the FUSE Studio into a set of well-designed hands-on tasks by limiting the choice to a single task that she has carefully chosen beforehand.

Anne's display of the reproductive orientation to FUSE Studio illustrates the dominance of the iterative aspect of agency. She is effectively reproducing her past way of working that she considers effective in supporting students' conceptual learning in physics. Here, she is balancing the tension between supporting students' agency and maintaining control over classroom events (see also Rainio and Hilppö 2017; Rajala et al. 2016).

16.5.3 Critical-Projective Orientation to Educational Change

Saara's interview displays the critical-projective orientation to *educational change*. Saara is a special education teacher in the lower grades. Her job is to provide part-time special needs education for children who are assigned to the regular classroom but have special educational needs. Saara's overall orientation towards the FUSE Studio was strongly positive. She saw in it a potential to realise the goals of the curriculum reform. She was supportive of the reform because it was in line with her personal educational vision that stressed recognising the individual potential of

every child. Saara displayed a critical-projective orientation towards the FUSE Studio. This orientation was realised primarily in terms of the projective dimension of agency, which was evident in her strongly held personal educational ideals. However, the practical-evaluative dimension of agency was evident when she stressed the need for concrete tools to help realise the abstract goals of the curriculum reform. Moreover, the iterative dimension was evident in her critical stance towards the everyday practices of the school that reduced her opportunities for realising the kind of pedagogy that resonated with her educational ideals.

In the next excerpt, Saara explains her educational ideals and the need for concrete tools for realising them.

Excerpt 6

Interviewer: And then what about this FUSE and teaching, do you see, maybe you do, that this FUSE can fit with your teaching?

Saara: Yep, for my teaching, this would fit for sure. I think that there is something here. Perhaps the word tool repeats itself, but maybe it is just it that describes it the best. So that the implementation of the core curriculum and interest-driven work do not realise themselves only at the level of ideology. Yeah, I have a feeling that these could be realised via FUSE, it would ease them.

I: So, that you need tools, you think in that way?

Saara: Yes, I think for the new curriculum. Yes, I think so. That we need to have some sort of tools. If we have to have tools for evaluation and for planning, something. And to realise digitalisation, I think we need tools. You cannot just think that you do it. Instead, we need something longer than the hand here. At least to get started. I think in a way that all sorts of things require a specific tool so that I can develop tools for myself as a way of overcoming the first step. That someone has [laughs] already thought through that new things. A kind of basic work takes so much time. So that when someone says that, try this for example, it will help drastically compared to a situation if I were to develop something new besides my work.

This excerpt shows that Saara considered the goals of the curriculum reform as too abstract. She stressed the need for concrete tools that could help to realise these goals. Her account suggests that even for committed teachers, substantial work is needed to realise these visions and ideals in everyday school life. Thus, the strong projective dimension of agency in Saara's orientation to the FUSE Studio – evident in her emphasis on the educational ideals – is balanced by the practical-evaluative agency dimension. The latter is evident in the realisation that the abstract ideas need to be translated into down-to-earth effective tools for planning, assessment, and digitalisation.

The next excerpt shows the educational vision helped Saara question the daily instructional practices in the school.

Excerpt 7

I: What is your teaching like at the moment? How would it concretely change as the result of the FUSE?

Saara: My work is at the moment more about it that those who do not follow in regular classes. So, I try to support them. And my thinking is that via FUSE, I could be at the lesson more to inspire and support when I am there on the spot where the actual work is done [laughs]. I would not have a sort of replacing work, but it would be supportive

work from the beginning so that no-one would drop and that I would no longer had that job of trying to support the dropouts. On the contrary, I would be there where everything happens and give support there already. I do not quite know yet how this would take place, but that is my dream [laughs].

I: Do you have that kind of experience that in the school your students are required to accommodate to a one style that there is not room for variation?

Saara: Yeah, unfortunately, a lot. That time at a time when you go through the page in a maths lesson, and you did not pass it on time. And you again not, you have to work at home a lot, and the meaning will be lost in three minutes. If the teaching is very much traditional and based upon books, then not many will be able to follow, but...and I think that really in my work there is a very small portion that there are learning difficulties. There are more problems in self-esteem and the ways in which to find one's own learning style. If the requirement is to work in one way, there is only one possible way to learn. That is, my work is now that I try to find a second, third or fourth way to learn. And I try to make teachers understand that you can also work in this way [laughs]

The excerpt shows that Saara saw a transformative potential in the introduction of the FUSE Studio to question and alter the organisation of education for children with special needs. She problematised the division of labour between the class teachers and herself in the role of special education teacher. Instead of helping students who were lagging behind the regular instruction catch up, she preferred preventive support that would help the students before they got into trouble in the first place. In fact, she attributed part of the students' failure to the nature of the instructional practices and educational tools that were used. She criticised that a specific and homogeneous learning approach was regularly demanded from the students. There was not room for diversity of learning approaches in classrooms. In the FUSE Studio, she saw potential for such diversity.

Thus, the excerpt illuminates an interplay of the projective and iterative dimensions in Saara's orientation to the FUSE Studio that culminated in a critique of the current ways of organising the education of the part-time special education students. This critique was made meaningful in light of the educational ideals that Saara displayed.

16.5.4 Creative-Projective Orientation to Educational Change

Mikko's interview illuminates the creative-projective orientation to *educational change*. Mikko had just been recruited as a craft and technology teacher in the upper grades in one of the participating schools. Mikko was also appointed as the teacher responsible for the maintenance of the FUSE Studio equipment. Moreover, Mikko had relevant background experience of teaching in an informal technology education setting and acting as a board member of the association that arranged this education. The creative-projective orientation involved an interplay of the iterative and projective agency dimensions that were evident in Mikko's attempts to envision a novel pedagogical concept through a creative synthesis of old and new tools and ways of working.

Although generally displaying a positive orientation to the FUSE Studio, Mikko had reservations about its tasks and materials, as shown in the following excerpt.

Excerpt 8

Mikko: Is it necessary that there is directly, like, only one way to solve it [a FUSE Studio task] which can be completed with these specific tools that we have given? I can understand that view or that setting because if there are no facilities or there are no crafts lessons in some schools in the States. Now with the FUSE, all this information has to come in, all knowledge and materials and solutions and these. So that more than, so that if it's brought to Finland, then you should see the potential to apply and change the basic set since there is the crafts education culture which is pretty strong in Finland... I can understand that not all things can be given in a box, but you must find the solutions yourself and the ways in which to work and that it gives you much more. It's never ready in a way. The work is never ready. Since there are no edges of the box, they will never become visible because there was no box.

In this excerpt, Mikko criticised the FUSE Studio challenge tasks for requiring a single specific solution instead of offering multiple routes to a successful task completion. He also regarded it a limitation that the tasks were associated with ready-made materials that were provided in boxes associated with each task. In Mikko's interpretation, these shortcomings stemmed from the lack of a tradition of craft and technology education in the USA. As a comparison, he referred to the culture of craft and technology education in Finland in which, in his description, open-ended tasks are preferred, and students need to select appropriate tools and materials themselves. In Mikko's opinion, the latter approach resonates more with the problems and challenges that the students would encounter in their lives outside of school.

Mikko's ideas about the FUSE Studio were not limited to those intended by its designers. Instead, he wanted to go beyond the limits of the FUSE Studio and envision a learning environment that he called a makerspace that he wanted to build in the school. This makerspace would incorporate some features of the FUSE Studio but go beyond its limitations and incorporate its concept within a general makerspace framework.

Excerpt 9

Mikko: In the school we have a good situation that we have a comprehensive school with crafts classes....So, pretty naturally the FUSE is from my perspective the virtual department. This means that there could be an appropriate technology class or properly equipped mobile carriage system or so. I do not think that it requires a special space for the technology making, since crafts spaces are relatively good for this purpose.... A space for dusty, dirty work. Then we have a clean and wet and then fun space where it is like this, and then you can mess around. So that it is inspiring, structured and somewhat functional space. And then the FUSE is part of it.

Mikko: Yeah, that it has been a long-term career dream or goal that I could build makerspaces. I would gladly continue working in such a space. But that it what I kind of, I don't know, maybe my education aims for co-ordinating or establishing such a space, so that then there comes this openness and mentality of sharing.

In this excerpt, Mikko envisions a makerspace learning environment in which traditional materials and ways of working would exist side by side with the FUSE Studio's digital tools. He first describes the opportunities for interdisciplinary work and engagement with materials and tools provided by the material spaces and

furnishing of special purpose classrooms. He then elaborates on the role of the FUSE Studio in the envisioned makerspace. Ultimately, the makerspace for Mikko is not only about specific tools or even interdisciplinary work. Instead, he refers to it as a specific culture that was characterised in terms of openness, communal sharing, and students' involvement.

Mikko also noted some tensions between his vision and the concept of the FUSE Studio as a closed environment that was beyond the local control.

Interviewer: Do you see that this FUSE supports your vision, or is it even against it?

Mikko: It is a closed environment. That is true. I do not know how to get its licence. Do we have to pay something or do we have to apply for it? But there are those usernames, school-based usernames, that tells that it is not open, but perhaps they have their own reasons for it.

Overall, in Mikko's display of *agentic orientation* to the FUSE Studio, both the iterative and projective dimensions are strong. The iterative dimension of agency is evident in his pride of and reliance on the Finnish tradition of craft and technology education as well as in his attempt to bridge traditional and new tools and ways of working. The projective agency dimension is strong in his desire to create a new kind of working space characterised by a distinctive culture of making and communal sharing. In this respect, the FUSE Studio was a steppingstone to his envisioned new space.

16.6 Discussion

This chapter discussed a study on *teacher agency* amid an *educational change* effort within the context of a Finnish school system. Specifically, we investigated the *agentic orientations* of teachers while they managed *educational change* efforts in their schools involving the introduction of a new digital learning environment in their schools as part of the adaptation to the new core curriculum.

Via illustrative examples stemming from our teacher interview data, we identified four *agentic orientations* that the teachers displayed towards the *educational change* efforts associated with the introduction of the FUSE Studio. Firstly, the *practical-evaluative orientation* emphasised the contextualisation of the *educational change* in the practical realities and actual details of the teachers' work. For example, through the practical-evaluative orientation, Kalle critically scrutinised his own pedagogical aspirations stemming from his past experiences as well as, in his opinion, overly optimistic beliefs involved in the discourse around the new curriculum. Secondly, through the *reproductive orientation*, the change effort was appropriated within a habitual pedagogical framework that placed value on existing practices by considering how they could be implemented in the new learning arrangement. For example, through the reproductive orientation, Anne formulated a plan for using the FUSE Studio as part of her physics instruction based on her choice regarding the actual tasks instead of giving the students a chance to choose. While this orientation compromised the key pedagogical principles of the FUSE

Studio, Anne nevertheless saw the reform as enriching her current ways of teaching through a provision of well-designed hands-on tasks that she seldom had time to design herself.

Thirdly, the *critical-projective* and *creative-projective orientations* manifested the teachers' future orientation and transformative agency. For instance, Raija identified a transformative potential in the FUSE Studio to better address diverse students' learning needs. The critical-projective orientation helped her to articulate criticism of the school's current pedagogical practices. In contrast, Mikko criticised the FUSE Studio for its somewhat closed tasks. Nevertheless, the FUSE Studio appeared to further his long-time pedagogical aspiration regarding the creation of a novel learning space for his students in the future. In sum, these findings demonstrate that it is not the new learning environments or materials that matter for *educational change* but how teachers make sense of and add to them through their *agentic orientations*.

The different *agentic orientations* that the teachers displayed singled out different educational features in the FUSE Studio. Special education teacher Saara emphasised students' choice-based learning and opportunities for students' individual potential to be realised. Physics teacher Anne noticed the opportunities for conceptual learning in physics. Craft and technology teacher Mikko approached the FUSE Studio from the tradition of Finnish crafts education, identifying both weaknesses and possibilities in the new learning environment. Classroom teacher Kalle linked the FUSE Studio to the new curriculum and considered its implementation within the constraints of the everyday realities of the school. These *agentic orientations* also demonstrated the teachers' transformative agency (Engeström 2006) in the process of considering and adapting to *educational change*. That is, not only did the teachers conform or resist the FUSE Studio, but they also considered it a stepping stone to further develop their teaching and provide students with better opportunities to learn. All this also asked for the teachers' conceptual agency (Greeno 2006; Lipponen and Kumpulainen 2011) to make sense and further develop their teaching.

Our data and analytical approach did not permit us to investigate how the teachers enacted their *agentic orientation* towards the FUSE Studio in practice. Nor were we able to demonstrate how the teachers' *agentic orientations* towards the FUSE Studio developed over time as a result of their daily work in the learning environment. However, the enactment and overtime development of *teacher agency* and *agentic orientations* as reflected in everyday practice are topics worthy of research attention in the future.

Taken together, our findings suggest that there are several, and at times conflicting, *agentic orientations* that mediate teachers' management of *educational change* efforts in their schools. Yet, a successful *educational change* in a school community requires teachers to reconcile and negotiate a joint understanding between different and possibly contradicting *agentic orientations*. Sustained *educational change* requires collective sensemaking. Important points to be discussed are the purposes of the reform, critical evaluation of existing practices, and how the reform can be contextualised in the details of the school's everyday practices. These insights are

likely useful to practitioners and policymakers in Finland and other countries undergoing *educational change*. In countries where the education system resembles the Finnish system, there is more scope for teachers to display diverse *agentic orientations*, and educational reforms usually leave outcomes open-ended (e.g., Vähäsantanen et al. 2017, this volume; Pyhältö et al. 2014). For international audiences who work in countries with accountability systems that constrain *teacher agency*, our findings nevertheless point out the importance of taking teachers' own sensemaking into account when implementing reforms (see also Priestley et al. 2012). Viewing teachers as valued participants who can collectively develop a shared vision and purpose to change efforts is important during educational reforms.

In addition, our findings are relevant for those who design interventionist research that seek to foster *educational change* by promoting *teacher agency* (Pyhältö et al. 2014; Vähäsantanen et al. 2017, this volume). For instance, our findings suggest that it would be important to facilitate collective sensemaking among teachers in school communities through deliberative reflections on their *agentic orientations* in terms of the interplay between the past, present, and future dimensions of agency. Although temporal relations are addressed in some interventions that aim to promote *teacher agency* (such as in Pyhältö et al.'s study (2014) asking teachers to produce an essay on "Remembering the future"), overall, few studies have explicitly addressed how the *temporal dimensions of agency* can be used foster *educational change* through intervention designs.

To conclude, the temporal framework of agency (Emirbayer and Mische 1998) that guided our investigation helped to disaggregate agency into its constituent elements. Instead of vague claims that *teacher agency* needs to be increased, our framework explicitly demonstrated how *teacher agency* was manifested in a variety of productive and (sometimes) unproductive ways. Furthermore, our analysis of the *temporal dimensions of agency* highlighted the fundamentally context-bound nature of *teacher agency* (see also Evans in 2017, this volume). That is, our study confirmed that agency does not exist in the abstract as a feature isolated from its social, cultural, and historical contexts. Instead, the form and content of agency stem from the specific, nested, temporal-relational contexts in which actors are embedded and with which they interact. In this sense, the agency of the individual teachers is intertwined with the collective practices of the schools. The social practices of the school and the school-level organisation of teaching and learning (which are, to a large extent, beyond the influence of individual teachers) constrain and enable specific forms of agency.

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Chapter 17

Transformative Agency and the Development of Knotworking in Building Design

Hannele Kerosuo

17.1 Introduction

The agency in the relations of subjects acting in contexts has been examined recently in many work-related studies drawing from sociocultural approaches (Eteläpelto et al. 2013). Among these studies are various interpretations and conceptualisations of the nature and existence of agency. Eteläpelto and her colleagues take a work-related approach in their conceptualisation of professional agency. It is practised at the interphase between sociocultural conditions of the workplace and professional subjects.

The purpose of this study is to investigate the initiation of transformative agency in the development of collaboration between different professionals working in projects. *Transformative agency* is the ability of individuals and groups to transform the organisation of their work and practices in changing circumstances (Virkkunen 2006). The construction of transformative agency refers to a process of “turning a set of individuals into a collective subject and agent of transformation” (p. 44).

Relatively little is known about transformative agency on the collective level at work. Previously, *transformative agency* has been examined in teachers’ professional development (Voogt et al. 2015), horticultural pest management (Vänninen et al. 2015), postal services (Haapasaari et al. 2016) and school-neighbourhood activity, middle school teaching and the work of librarians (Sannino et al. 2016).

Studies of *transformative agency* differ from studies of the agency of subjects, as they examine the collaborative and collective agency of groups, communities and networks rather than the agency and identity of subjects. However, the subjects are not underplayed in these studies, as the evolution of transformative agency is often

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examined in the interplay of subjective and collective purposes and actions (see, for instance, Voogt et al. 2015; Bajaj 2009). In its pursuit of joint action in work with others, the notion of transformative agency is close to professional agency (Eteläpelto et al. 2013) and relational agency, as explicated by Edwards (2005; Edwards et al. 2017, this volume). Relational agency is “a capacity to recognise others as resources, to elicit their interpretations and to negotiate aligned action” (p. 175). Billett and Pavlova (2006) examine the evolving of a subject’s sense of self as “agentic actions” in exercising agency in his or her relations to workplaces governed by their regulatory practices. However, the focus of their study is on individual agency.

Building design projects in the construction industry provides an illustrative example for analysing the transformative agency in the collaboration of different professionals working in projects. Several design offices and firms assigning specialists and experts from a range of design disciplines are usually contracted to carry out a building project. The industrial context is inherently adversarial and tension laden (Bishop et al. 2009) due to multiparty contracting, which leads each design discipline to take responsibility for its own share of a project (Crotty 2012). Many authors indicate that the use of the digital *building information modelling (BIM)* tools currently implemented in the industry would diminish fragmentation and improve collaboration among designers in building design. *BIM* is “a methodology to manage the essential building design and project data in digital format throughout the building’s life cycle” (Penttilä 2006, p. 403). The full deployment of new *BIM* technologies requires the development of collaboration between the parties involved in building design. The development of collaboration is challenging because the players stick to old, routine practices that are difficult to change (e.g. Harty 2008; Whyte and Lobo 2010).

The Built Environment Process Re-engineering (PRE) programme provides the context to examine transformative agency in the construction industry. The programme was founded in 2010 to support the implementation of *BIM* in Finland. Managers, experts and specialists from different companies, firms and universities representing various players in the field created a partnership for that purpose (<http://rym.fi/program/pre/>). In the programme, the participants developed the idea of knotworking as a solution to the problems and tensions of collaboration in *BIM*-based design projects.

Knotworking is a flexible practice for mastering collaboration between the experts and specialists working in building design projects. Knotworking is characterised as “a pulsating movement of tying, untying and retying together seemingly separate threads of activity” (Engeström 2008, p. 194). In a knot, the social interaction is connected to the overall purpose and goals of the work at hand, not only to the interaction or communication between subjects as such. Knotworking is associated with a new emerging type of work called co-configuration. Co-configuration requires new flexible types of collaboration such as knotworking between multiple collaborating producers. Mutual learning from interactions between parties operating within and between organisations is also needed to support the development of production and services (Engeström 2016).

The aim of this study is to contribute to the discussions of professional agency through examining the initiation of transformative agency in the development of new collaborative practices. The initiation phase of transformative agency has not been previously examined in the evolution of transformative agency. However, this phase may be critical in projects engaging various professionals. The research investigates the questions of how transformative agency emerges in the development of knotworking and how the initiation of transformative agency can be supported in the development of new work practices.

The theoretical framework of the study is based on *cultural-historical activity theory* (CHAT or activity theory, in short), introduced below. Activity theory provides a methodology and methods for studying transformative agency. Activity theory guided the part of the PRE programme in which knotworking was initiated and developed, but was not applied in the research and development programme in general. I begin with the introduction of the research context. Then I present the activity-theoretical approach of the study followed by the explication of the methodology, methods and data of the study. After that, the findings of the study are presented. Finally, I discuss my findings and conclusions about the initiation of transformative agency and means of supporting it in development processes at work.

17.2 The Development of Knotworking as the Research Context in the PRE Programme

The Model Nova work package of the programme became the initiator of knotworking. The aim of the work package was to develop new practices driven by the use of *BIM*. The work package began to work actively towards this aim in 2011 after the launch of the PRE programme. The participants of the work package represented all disciplinary communities of the industry. A representative of a big property owner acted as the leader of the work package. The members of the work package came from three large construction companies, five design offices and two universities. The activities of the work package involved research, seminars and workshops. No single theory was explicated, but process models and simulations deriving from industrial management and engineering were used. However, the activity-theoretical approach guided the development of knotworking.

In January 2012, the participants of the Model Nova work package organised a three-day seminar to accelerate the development of BIM-based practices. The seminar programme involved general meetings and group work in three groups. It became the key event for the development of the idea of *knotworking*. The participants created a preliminary concept of knotworking for BIM-based design and planning. They decided to test the concept in the early design of a school. The participating firms assigned an interdisciplinary group to the experiment.

After the seminar, the planning of the knotworking experiment was carried out in four preparatory meetings during the spring of 2012. The purpose and aims of knotworking were defined, an action plan was drawn up and the tools were created for the experiment. The two-day experiment was held in May 2012. It started with an introduction of the purpose, aims and tools to the client and the users of the building. Next, one interdisciplinary group began to create alternative plans for a new school building in an empty lot. The second group began to plan alternative renovation plans for an old building located in a separate lot. The architects created altogether five different architectural schematic designs for the two buildings. The design engineers prepared energy solutions for each architectural model. For instance, energy values, circumstantial factors and investment costs were evaluated in relation to the goals and requirements set for the building. The cost calculation experts provided calculations for selected energy solutions. The BIM expert included in the design group worked on a tool to be used to present alternative plans to the client and users in a feedback session. The entire process of developing knotworking has been examined in a previous study (Kerosuo et al. 2015; Kerosuo 2015).

Despite the short duration, the knotworking experiment was considered to be successful. The quality of the designs was good, and the participants regarded the opportunity to learn from each other's work as an advantage. The idea of *knotworking* was introduced as one of the key results to the industry in the research and development programme. Some companies introduced it on their Internet pages as a new and promising way of working. The development of knotworking is still ongoing in different organisations and companies of the industry. In the following section, the activity-theoretical approach of the study is presented.

17.3 The Activity-Theoretical Approach of the Study

The foundations of cultural-historical *activity theory* derive from studies of human development conducted in the 1920s. Its main concepts relevant here are “mediation”, “object-oriented activity”, “contradiction” as the driving force of development and “expansive learning”. The idea of *mediation* is based on the mediating effect of cultural artefacts and concepts in the development and *learning* of human activity. Vygotsky (1978) defined the mediating function of sign and tool as a basic feature of human behaviour. The function of a tool is “to serve as the conductor of human influence on the object of activity” (p. 55), whereas the function of a sign is oriented internally to mastering oneself. The object of activity refers here to nature, whereas the sign refers to internalised human behaviour and action. However, both functions are mutually linked in development.

Whereas the unit of analysis was individually focused in Vygotsky's studies, Leont'ev extended the unit of analysis to focus on collective activity. Leont'ev (1978) defined the general structure of activity to involve goal-directed actions and automated operations subordinated to activity. The difference between activity and

actions is realised through the division of labour. For instance, in Leont’ev’s famous example of a tribal hunt, two groups perform different actions of chasing and killing in the collective activity of hunting. Leont’ev also clarified that objects distinguish different activities from each other. An object gives purpose, meaning and sense to collective activity. For instance, a building is an object of activity built to satisfy human needs to have a place to live. An *object of activity* is “an independent existence as subordinated to itself and transforming the activity of the subject (...) an image of the object as a product of its property of psychological reflection that is realized as an activity of the subject” (p. 52).

Engeström (2015) explicates the basis of activity to be on “material production mediated by technical and psychological tools as well as by human beings” (p. 59). Engeström modelled the structure of *human activity* (see Fig. 17.1) to entail the systemic whole of the relations between subjects, instruments and objects and the division of labour, community and rules. The notion of instrument entails both tools and signs subsumed to one category.

Engeström proposes that *contradictions* are a fundamental feature of activity renewed by clashes between individual action and an activity system. Internal contradictions represent historically accumulated tensions between opposing forces in an activity and between activity systems. They are manifested in various forms such as conflicts, disturbances and tensions in an activity. Contradictions can also trigger *learning* and development under certain conditions. According to Engeström (2016), “*contradictions* become an actual driving force of expansive learning when they are dealt with in such a way that an emerging new *object* is identified and turned into a motive” (p. 47).

The theory of *expansive learning* created by Engeström (2015) is a form of learning that can support qualitative transformations of collective human activity (Engeström 2016). Expansive learning explicates the logic of the development of an activity from its historical formation and the resolution of contradictions to the

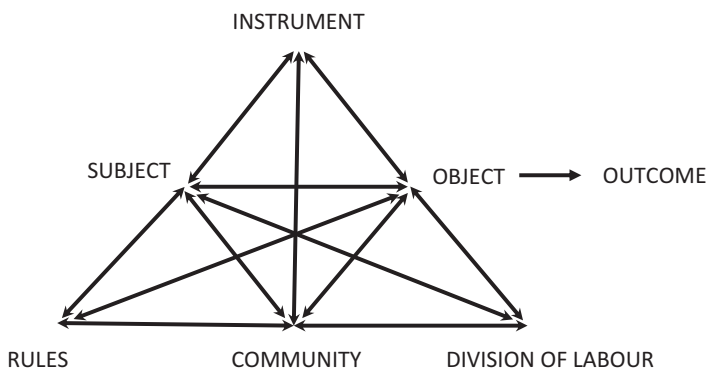


Fig. 17.1 The structure of *human activity* (Reprinted and adapted from Engeström (2015, p. 63) with permission from Cambridge University Press)

development of new activity. The focus is on the learning processes “in which the subject of learning is transformed from isolated individuals to collectives and networks” (Engeström 2016, p. 44). The outcome of solving contradictions is an initial abstract idea of an object that is gradually enriched and transformed into a new expanded object and form of activity.

Transformative agency is considered a quality of *expansive learning* in activity-theoretical studies. The subject’s active engagement and commitment (i.e. transformative agency) is required in every phase of the expansive learning process. Subjects need to break away from their given frames of reference, and new concepts and practices must be created, implemented and consolidated (Sannino et al. 2016). Next, the activity-theoretical methodology of the study as well as the methods and the data of the study are presented.

17.4 The Methodology, Methods and Data of the Study

17.4.1 The Activity-Theoretical Methodology of the Study

The methodology of the study is based on the theory of expansive learning (Engeström 2015). The concepts of instrumental mediation, object-oriented activity and contradictions as driving forces of learning and development are also included. The methodology is understood as a general approach of studying a research topic distinct from methods that are specific research techniques (Silverman 1993).

Expansive learning has been shown to support the evolution of transformative agency in some previous studies (e.g. Vänninen et al. 2015; Haapasaari et al. 2016; Sannino et al. 2016). *Expansive learning* is often represented as a sequence of epistemic or *learning actions*. The ideal-typical process begins by questioning and analysing the internal contradictions of a current activity system. Then it proceeds to modelling solutions for the identified contradictions and to examining and testing the new model thus created. Finally, the new model of an activity system is implemented, and the entire process is reflected on and consolidated as a new practice.

Engeström (2016) emphasises that the theory of expansive learning does not represent a universal formula of phases and stages. The ideal-typical model cannot usually be found as such in a concrete learning process. Different types of *learning actions* can also emerge in a single phase of the ideal-typical model. For instance, the process of expansive learning involved three or more learning actions in every phase of expansive learning in the library (see Engeström 2016). In this study, I focus on the questioning and analysis of the collaboration between different professionals and on modelling a new solution for BIM-based collaboration in building projects. The object of activity is the development of the new model, which is modelled as an activity system.

Transformative agency emerges when practitioners take initiatives to change their practices by examining problems and by explicating and envisioning new

possibilities for the identified problems in their work activity (Haapasaari et al. 2016). Engeström (2016) has identified *five distinct forms of transformative agency* when applying the methodology of expansive learning in interventionist research. The forms of emerging transformative agency are the following:

- (a) Resisting change by criticising, questioning, opposition or rejection
- (b) Explicating new possibilities or potentials in the activity
- (c) Envisioning new patterns or models of the activity
- (d) Committing to concrete actions aimed at changing the activity
- (e) Taking consequential actions to change the activity (pp. 241–243)

The forms of emerging agency are used in the analysis of expressing transformative agency in this study.

The emergence of transformative agency can be supported by *formative interventions* such as Change Laboratories that are based on the theory and methodology of *expansive learning*. The *Change Laboratory* is a work-based learning environment in which participants collectively solve and create solutions to work-related problems and contradictions. The design of the laboratory involves various sessions organised one after another to follow the different phases of expansive learning (see, for instance, Haapasaari et al. 2016). The theoretical core of formative interventions is Vygotsky's principle of double stimulation (Sannino 2015). The principle of *double stimulation* refers to a dialectical process of learning and development in which a problem or a tension representing a manifestation of contradiction is worked on as a first stimulus in a laboratory session. Conceptual tools such as the models of an *activity system* are applied to support the process of solving contradictions as second stimuli. Typically, research interventionists provide the results of their research for the creation of the first stimulus, and the conceptual models act as second stimuli. But participants of the laboratory can also create their own conceptual tools to be used as second stimuli in the design of the new model of an activity (see, for instance, the library case in Sect. 7, Engeström 2016).

In the current study, the initiation of transformative agency was *not supported by an intentional formative intervention* in the PRE programme seminar. However, a researcher used activity-theoretical resources and experiences from previous formative interventions conducted elsewhere. The use of previous resources was not previously planned, and the formative intervention was realised in an improvised manner as “*an intervention in the wild*”.

17.4.2 *The Data and the Methods of the Study*

The ethnographic data was collected from the entire process between 2012 and 2014. The data on the development of knotworking consists of 42 h of audio and video recordings, documents and photographs. A description of the entire process is reported elsewhere (e.g. Kerosuo et al. 2015; Kerosuo 2015). Only the data of the group meeting at the Model Nova seminar are selected for analysis here. The critical

meeting for the initiation of transformative agency and the development of *knotworking* was the last of six group meetings of one group in the seminar (the participants were divided into three groups). Before the sixth meeting, this particular group was beginning to show signs of frustration over not progressing with their group assignment. The assignment was to create a general process model for BIM-based building projects. In the sixth meeting, the group deviated from the original assignment and began to develop the process model as part of developing *knotworking*. The sixth and critical meeting lasted for two and a half hours. The group of 12 participants involved a specialist representing the property owner, two architects, a structural designer, a HVAC¹ designer, an energy and life cycle specialist, a BIM expert, a project planning specialist, a building consultant and three researchers. The present author together with her colleagues² conducted the fieldwork and gathered the data in the seminar.

The main data of this study comprise two transcripts of the video recordings. The first transcript was created from the recording of the sixth meeting of the group that generated the idea of *knotworking*. The second transcript is from part of the general meeting of all three groups in which the idea was presented to all of the approximately 30 participants in the seminar. The group meeting of 12 participants lasted 2 h and 30 min, and the transcript of the meeting contains 1010 turns of talk. The part of the general meeting included in the study lasted 30 min, and its transcript constitutes 98 turns of talk. The original video recordings of the meeting are also used in the analysis to see when the members worked on the *knotworking* models. The group activity involved both sitting at one big table and moving around in a large room. Only one video camera was routinely used in the data collection because the current researcher did not plan the event to be included in the actual research data gathered in the project. Photographs of the meeting are also included in the research data to capture incidents in different parts of the room that were not reached by the video camera. The printed process model that the group had previously designed and the sketches of the knots the participants drew during the seminar are also included as additional data to support the analysis based on the transcripts.

The method of data collection was *participant observation* (Hammersley and Atkinson 1983). The researchers' participation in the PRE programme as partners naturally granted access to the locations of the activity. However, the degree and the quality of the participation varied according to their *roles* at the seminar meeting analysed in this study. Before the seminar meeting, the researcher acted in the role of a participating partner with only limited knowledge about the construction industry but with expertise in developmental work research. The role changed into an *ad hoc interventionist-observer* at the beginning of the meeting. The two other researchers

¹HVAC refers to heating, ventilation and air-conditioning in engineering.

²PhD students Teemu Lehtinen and Anne Kokkonen from Aalto University together with the author collected the data at the Model Nova seminar.

were responsible for organising the seminar, and their role was to act as facilitators. At the time of the meeting, the researcher of this study was still new to the field, and she was able to follow a recommended principle of doing ethnography, which is “to put aside her own familiar perspectives to gain an awareness of that which was alien to her” (Raeithel 1996).

We began our analysis by dividing the transcript of the meeting into speech turns. Every utterance that can be heard in the discussion is counted as a speech turn. The number of speech turns ($n = 1010$) is only an approximation because multiple and overlapping discussions took place at the same time. Firstly, the ethnographic analysis here does not require the accuracy of traditional discourse analysis. The interest is on seeking patterns of talk and action for the reconstruction of practices of discourse typical of ethnographic analysis rather than seeking structures (Raeithel 1996). Secondly, we adopt the concept of a transitional episode to indicate the fragments of discussion critical in the emergence of transformational agency. The concept of a transitional episode (Kerosuo 2011) marks the shifts in (inter)action during which new possibilities are raised, articulated and acted upon. Transitional episodes resemble key incidents in that they open up new issues for analysis (Emerson 2004). In an ideal situation, a transitional episode can lead to developing the ideas initiated during them. One episode is constituted of a string of speech turns, which may or may not be disrupted by other parallel or irrelevant discussions. Thirdly, we apply the forms of participants’ emerging transformative agency defined by Engeström (2016) (see Sect. 4.1). The five forms of inter(actions) in the evolution of transformative agency are used as a coding system in the analysis of transitional episodes. Next, the findings of the study are presented in the subsequent section.

17.5 The Emergence of Transformative Agency During the Initiation of Knotworking

We identified four transitional episodes of evolving transformative agency during the initiation of the idea of knotworking. Three of the transitional episodes emerged in the group meeting, and the fourth episode took place in the general meeting of the seminar. Four types of actions expressing the emergence of transformational agency were identified in the transitional episodes. These were (TA1) resisting change, criticising, questioning, opposition or rejection, (TA2) explicating new possibilities or potentials, (TA3) envisioning new patterns or models of the activity and (TA4) committing to concrete actions aimed at changing the activity. The fifth type, (TA5) taking consequential actions to change the activity, was not realised until after the group meeting when the participants decided to test the idea of knotworking in a real project. Next, we present the findings of our analysis in temporal order.

17.5.1 *The First Transitional Episode: A Discussion About the Tensions of the Current Design Activity and the Idea of Knotworking as a Possible Solution*

The episode began with a researcher criticising the current status of the collaboration among the designers for not having a shared purpose and object of activity (speech turns 1 and 4 in excerpt 1 below). The researcher drew a model of an *activity system* on a flipboard to clarify her criticism of the lack of an overall object. She continued by explicating new possibilities through her observations of the design meetings. She suggested that the method of *knotworking* would allow different design disciplines to work together on a shared object across contractual and disciplinary boundaries. The HVAC designer responded to her by requiring clarification of the concept of an object (turn 2). He disagreed with her on the interpretation of the current problem in the design collaboration (turn 5). Instead, he thought that waiting for colleagues from different design disciplines to complete their tasks was a critical problem in the designers' collaboration. The actions of criticising and explicating are intertwined in turns 1 and 4, representing the actions of questioning and criticising (TA1) and of explicating possibilities (TA2) to express the emergence of transformational agency.

Excerpt 1

- (1) *Researcher 1*: This is the normal pattern of action, and the problem is who has the overall responsibility and shared responsibility of the object. (TA1) In a normal case, the project manager has it, but I have seen some moments [refers to her study of observing design meetings] in which a shared responsibility and engagement emerges. Then one can see a shared object of activity emerge (...) ³ and that could be the knot. (TA2)
- (2) *HVAC designer*: What do you mean by the object of activity?
- (3) *Researcher 1*: An object of activity is more than a single task.
- (4) (...).
- (5) *Researcher 1*: A shared motive is included in the object of activity, why something is done. Those designers are skilful in doing their own tasks, but there is this problem of integration, and that could be improved in the knots through shared responsibility for the object. (TA1)
- (6) *HVAC designer*: I think that it is not a problem that everyone is doing their own tasks but the problem is that we always have to wait that someone gets ready before we can proceed with our tasks.

After excerpt 1, more voices joined the discussion, and the group started to reflect on the collaboration between different design disciplines. The project planning specialist was concerned about the definition of a shared motive: "We have to define the motive! Of course it can be difficult to define, people are motivated in different ways". She also noted that the industry was moving towards better practices

³(...) Irrelevant text has been removed. LA = learning action, TA = transformational agency.

by adopting new contractual models and shared instructions for BIM practices. The BIM expert introduced his idea of a cyclic process of collaboration. Instead of only a linear process, cycles could be included in the process for carrying out shared tasks such as the calculation of energy costs. The seamless work of all the design disciplines was needed for the realisation of those calculations.

17.5.2 The Second Transitional Episode: The Use of the Activity System for Explicating and Envisioning the Design Process in the Knot

The discussion in the second transitional episode concerned the use of the *activity system* to explicate the elements of a design process in the knot (excerpt 2). The researcher started the dialogue by suggesting the use of the activity system model to envision a new model of collaboration (turn 1, TA3). After a short exchange, the energy specialist emphasised the importance of concrete actions. He suggested that they would start modelling one task using the cycle model discussed in episode 1. After that, it would be easier to analyse the elements of an activity system (turn 2, TA2). Then he stated that if a concrete use was not possible, they would have to reject the models (turn 4, TA1). The specialist representing the property owner (shortened to the property owner here and below) supported the use of the model (turn 5, TA2), and the HVAC designer explicating how to concretise the idea of a knot (turn 6, TA2). He also criticised previous meetings for not being successful (TA1). Lively discussions about shared collaboration had taken place but were not concretised into action.

Excerpt 2

- (1) *Researcher 1*: This [activity system] can be used to ensure that all relevant actors are included. It is also easy to point out the relations between different issues in this model. For instance, a problem related to tools [could be analysed], or this division of tasks is not working between us. (TA3) (...)
- (2) *Energy specialist*: Instead of dealing only with abstract issues, could we concretely take one example from there [he points at the process model on the wall] and analyse it as a cycle at first? Then it is perhaps easy to find the points of the prism or to try to define them [refers to the elements of the activity system]. (TA2)
- (3) *Researcher 1*: Yes, I agree.
- (4) *Energy specialist*: Otherwise we have to forget this [model] at once. (TA1)
- (5) *Property owner*: In my opinion we could proceed with that (model), and we could then see how to define (---).⁴ (TA2)
- (6) *HVAC designer*: We have to consider what we experienced yesterday (---), perhaps we started to plan the process, but in terms of collaboration this falls apart.

⁴(---) Speech that cannot be heard in the recordings.

(TA1) If we could have three of those examples [refers to turn 1 of the energy specialist], we ought to think about what is really happening there [at the knot] and what different stakeholders would need to do before the session and what would be expected to happen during it. It would be concrete. (TA2)

The second transitional episode was a step forward from the presentation of ideas to the search for the means to make abstract ideas concrete. After the dialogue above, the participants began, partly joking, partly seriously, to name the activity introduced as knotworking. For instance, names such as “awakening” or “a new day” encapsulated the experiences of some of the participants in a humorous way. “Simulator”, “first simulator” and “second simulator”, which were suggested by the HVAC designer, reflected the disciplinary perspective of mechanical engineering. The discussion expanded into questions about what knotworking could do and how the designers could work together in the knot. The promise that knotworking could provide the means to achieve new knowledge based on jointly conducted analyses gave rise to comments about knots being worthwhile to the industry. The speech turns were fragmented by enthusiastic discussions taking place at the same time.

17.5.3 The Third Transitional Episode: The First Knot “Requirement Model”

The explicating and envisioning of the first knot, the “requirement model”, took place in the third episode. The HVAC designer promoted the process by envisioning the purpose of the knot as solving the problem of waiting mentioned above. He made suggestions about who should participate in the knot and what the outcome of the knot might be (turn 1, TA3). The building consultant explicated further issues that needed to be discussed in the first knot (turn 2, TA2). The HVAC designer disagreed that the issues brought up by the building consultant were necessary (turn 3, TA1). The building consultant did not accept the opposition of the HVAC designer and gave reasons for the importance of the issues in the building project (turn 4, TA1). After a short interruption, the HVAC designer introduced the perspective of the added value of collaboration, which also needed to be considered (turn 5, TA2).

Excerpt 3

- (1) *HVAC designer*: We could think about how *knotworking* begins, what the first knot could be. If we consider the collaboration between designers and a completely new model of practice in the building project, the first knot could be the requirement model. (...) And there would be a life-cycle specialist, a structural designer, and the outcome could be to have different alternatives for the [investment and building] costs, life-cycle costs and the schedule for a building project. And there could be different approaches (---) (...). Some development of a software application would be demanded. We already have the tools, but these tools ought to be applied in a new way. (TA3)

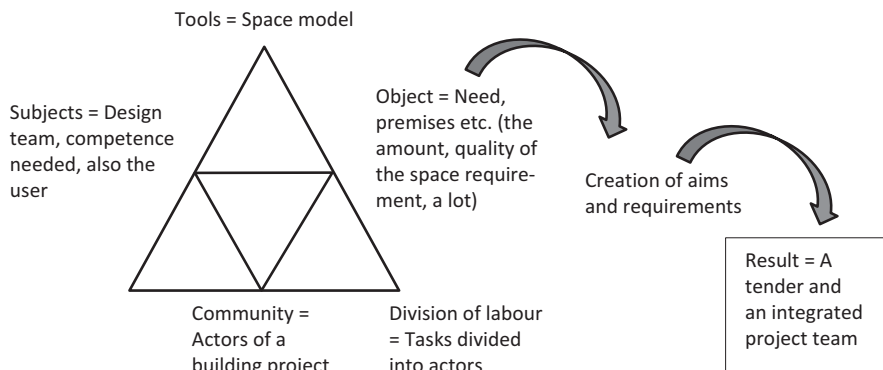


Fig. 17.2 The *activity system* model of the first knot, “requirement model” (The participants created the model of an activity system with pen and paper, and the researcher recreated it in PowerPoint.)

- (2) *Building consultant*: Applications are not a problem but bring up issues that require agreement [need to be dealt with] because there are many contributory issues that the client does not know about but that are needed there, such as the elevation of a ceiling. (TA3)
- (3) *HVAC designer*: No, but we should not think about those at this stage. They are kind of (---). (TA1)
- (4) *Building consultant*: Yes, but changing issues here affects the scheduling of the building (---). (TA1) (...)
- (5) *HVAC designer*: The roles of different players, how we could give added value to it [collaborative working] and what the outcome could be. (TA3)

After a few exchanges regarding the HVAC designer’s suggestion, the group began to plan how to proceed with the modelling of the knot. They found a case example known to everyone and modelled the first knot, the “requirement model” (see Fig. 17.2). The model described a design team as a subject, the specification of a client’s needs as an *object*, a space model⁵ as tools, the actors of a building project as the community, the tasks divided up by the actors as the division of labour and a tender and an integrated team as the results. What is remarkable is that the group depicted itself as a collective subject working on a joint object, although the HVAC designer and the building consultant had a small disagreement about the tasks accomplished in the knot (turn 3 and turn 4).

⁵A space model refers to an architectural plan in which the structuring of space is defined in a building.

17.5.4 *The Fourth Transitional Episode: A Concrete Case for a Knotworking Experiment*

The fourth transitional episode presents a concrete suggestion for a case in which to implement the idea of knotworking. At the beginning of the episode, the HVAC designer asked whether they would need to develop tools for *knotworking* (turn 1, TA2). After support from researcher 1 (turn 2), he expressed the need to test knotworking (turn 3, TA2). The importance of tools for the development and engagement of the team members was shortly discussed in a larger group. After a while, the HVAC designer suggested a project that could be appropriate for the experiment (turn 5, TA4). The case was a school building that would include day-care and pre-school activities as well as the activities of the village community around it.

Excerpt 5

- (1) *HVAC designer*: Should we consider the development of the tools required in this kind of practice? (TA3)
- (2) *Researcher 1*: Yes, this is an important point!
- (3) *HVAC designer*: And we need a project case quickly for testing this. (TA2)
- (4) *Building consultant 1*: Yes, that is for sure. (...)
- (5) *HVAC designer*: I have a project case that could fit this kind of testing. I am not sure whether it will succeed, but it is a community centre with a school for 100 pupils and a day-care unit (...). There are two alternative lots: one for a new building and another one with an old building that is currently a community house. (TA4)
- (6) *Project planning specialist*: That sounds really good!

A group-level commitment emerged in the discussion following the suggestion. Correspondingly, the participants' comments were short and enthusiastic. The HVAC designer presented the idea to the other participants of the Model Nova seminar after the group work. The Model Nova group decided to proceed with the experiment and organised a *knotworking* workshop in which designers would work together for one or two days to test the idea of knotworking in a real case. The goal of the workshop was to produce an alternative design for a client's decision making in the early design phase of a school. The client, users of the future school, architects, designers representing different design disciplines and cost calculation specialists worked together in the knotworking workshop. Alternative architectural scenarios, cost calculations and energy efficiency figures were provided as the results. The plan was to introduce the results to the client and the users for discussion and decision making.

17.6 Discussion

The evolving of transformative agency is not a straightforward process but an outcome of intertwined transformative actions (Haapasaari et al. 2016). The findings of this study demonstrate a similar pattern of transformative agency to that reported by Haapasaari and her colleagues. More than one expression of transformative agency was realised in each of the four transitional episodes. In episode 1, the process started with a criticism of the prevailing practices and by an explication of the possibilities of knotworking to solve problems of collaboration in building design. The process continued in episode 2 by explicating and envisioning the new possibilities at the same time as they were being questioned. In episode 3, a concrete model of the first knot was envisioned and mildly criticised. After that, the new model was explicated to others in the seminar, and decisions were made about consequential actions to test the model in practice in episode 4.

Transformative agency was most powerfully explicated in episodes 3 and 4, during which the concrete model of knotworking was created and explicated to others, and decisions were made to test the model. However, the expressions of transformative agency in episodes 1 and 2 were also important for its initiation. In those episodes, the collective motive and the *object* for developing the new form of activity were created through criticising in episodes 1 and 2. Bajaj (2009) refers to such “transformational resistance” as an integral, if not synonymous part, of transformative agency. The manifestations of *contradictions* in the form of resistance were not strongly expressed in the initiation of transformative agency. However, the researcher’s criticism and the HVAC designer’s comment in the first transitional episode may implicitly suggest the aggravation of a contradiction by the BIM and the prevailing processes.

Although the focus of the research was on the initiation of collective transformative agency, the part that individual or subjective agency plays in development processes cannot be discounted. Individual agency was not, however, the focus of the analysis here. An extended analysis would be required to elicit the role of individual agency in the current data. Yet agency based on disciplinary communities still became evident in the data. For instance, the participants representing different expertise had different opinions on what was important in the development of knotworking (see excerpt 3). Participation in collective activity is realised at the same time as that of a subject and the community. Subjects are directly involved in the conduct of collective activity, whereas also “other individuals sharing an interest and influencing the unfolding activity (...) are part of a community” (Groleau and Demers 2012, p. 261).

Resources gained from working with others seem important for the learning of both subjects’ agency (Billett and Noble 2017, this volume) and collective transformative agency. In studies drawing on the theory and methodology of *expansive learning*, *professional learning* is analysed as intertwined in the epistemic and learning actions of concrete practices (e.g. Engeström 2016; Sannino et al. 2016; Vänninen et al. 2015). Professional learning was realised in the same way in this

study. The idea of the zone of proximal development originally introduced by Vygotsky (1978) and reformulated by Engeström (2015) is quite obviously embedded in this and other studies of expansive learning. The zone of proximal development is “the distance between the present everyday actions of the individuals and the historically new form of the societal activity that can be collectively generated” (p. 138).

The unintentionally enacted intervention depicted here seems to involve the characteristics of formative *intervention* (Sannino 2015). The principle of *double stimulation* was realised through the participants’ collective constitution of the problems and tensions to be solved in episode 1 (first stimulus) and the model of an *activity system* presented by the researcher as second stimuli to support the development of knotworking. The participants adopted the model of an activity system to envision the idea of knotworking. Notably, the process led to the concrete outcome of carrying out a knotworking experiment in a building design project.

The emergence of transformational agency indicates the capability of individuals, groups and communities to develop their work environments. Its emergence in haphazard processes such as the one studied here was perhaps the result of a fortunate blending of various relevant circumstances. The group of participants had been involved in the process of developing BIM-based practices for over a year, and they knew each other well enough to engage in a process of development. The researcher involved in the process was able to use her previous experiences of formative interventions gained in other contexts. It seems inevitable that the transformation of current practices would require interventionist approaches to ensure the achievement of the benefits provided by the uses of BIM.

In transformational processes, the resources gained through the creativity of the participants to support professional agency are beneficial (see Collin et al. 2017, this volume). The characteristics of *transformative agency* also resonate with the capacity of relational agency “to align one’s thoughts and actions with those of others, in order to interpret problems of practice and respond to those interpretations” (Edwards 2005, pp. 169–170). But the development of these capacities seemed to require the emergence of transformational agency. Promoting new activity is, however, also needed to enable responses to interpretations of problems in practice.

The initiation of transformative agency played an important part when considering the generalizability and practical utility of the development of knotworking. Generalizability refers here to the representativeness of a case to a larger population (Silverman 1993). The first experiment led to four other experiments of *knotworking* in different contexts of Finnish and Danish construction industries. The experiments also acted as a springboard to other experiments and to the development of new service concepts of knotworking still under preparation in the industry.

17.7 Conclusions

The evolution of transformative agency is a critical phase for the creation of new ideas in the changing world of work. Transformative agency evidently co-evolves with the development of new work practices through learning. Its emergence requires the subjects' engagement in and commitment to collective activity. The alignment of subjective and collective motives and the constitution of a joint *object* is a prerequisite for the emergence of transformative agency. A successful process of the evolution of transformative agency requires outside support and recognition of the development outcomes. The methodology of *expansive learning* and the principle of *double stimulation* can provide support for the evolution of transformative agency even in *unintentional interventions*, as this study shows. The seminar allowed three different groups to work separately, creating a suitable situation for evaluating the new ideas. The involvement of a large group representing several players in the field also supported the immediate diffusion of the results and the continuity of transformative agency. New research is especially needed on the intertwining of individual and collective forms of transformative agency during developmental processes.

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Chapter 18

An Agency-Promoting Learning Arena for Developing Shared Work Practices

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18.1 Introduction

In rapidly changing work environments, continuous learning is necessary not only for individual professionals but also for work communities and organisations (Billett 2011; Hökkä and Eteläpelto 2014; Kira 2010). Work organisations, such as those in education and healthcare, are increasingly expected not only to improve their work practices and structures in order to produce high-quality services but also to be productive and innovative (Eteläpelto et al. 2013, 2014; Messmann and Mulder 2017, this volume). This expectation requires professionals to engage in learning that is transformative and innovative rather than merely reproductive (Alasoini 2011; Tynjälä 2013).

Although much individual and collective learning occurs within everyday work activities (Billett and Noble 2017, this volume), the hectic and pressurised atmosphere of contemporary workplaces may impede innovative and effective workplace learning (e.g. Kira 2010). Thus, there is an urgent need to organise venues for training and learning within workplaces. In such organised settings, it is vital to prompt and activate individuals' professional agency, because agency appears to be relevant to learning, for both individuals and work communities (Billett 2011; Cairns and Malloch 2011; Eteläpelto et al. 2014; Goller and Harteis 2017, this volume; Imants et al. 2013; Kerosuo 2017, this volume; Philpott and Oates 2017). When their professional agency is promoted, individuals can become agentic contributors who are able to express their opinions, ideas, and suggestions regarding their work practices. An agentic perspective on learning emphasises the responsibil-

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ity of both individual and collective actors in learning processes, bearing in mind that taking such responsibility increases the actors' sense of ownership in learning (Cremers et al. 2016; Labone and Long 2016; Lovett et al. 2015).

Since the role of professional agency is emphasised in work-related learning, it is also necessary to organise and investigate agency-promoting learning events. These events should also be seen as bound up with social interactions, because even from an agentic perspective, the social nature of learning cannot be ignored (Cairns and Malloch 2011; Eteläpelto et al. 2014; Philpott and Oates 2017). This chapter reports on an investigation of the *work conference* as an orchestrated agency-promoting learning arena. The aim of such conferences is, ultimately, to enhance the development of shared work practices within dialogical interactions (Kalliola and Nakari 2007). We view that the work conference as an agency-promoting intervention has the potential to trigger participants' professional agency; this agency is in turn the pivotal condition for work-related learning, which includes the development of work practices.

The chapter is based on assessments obtained from the participants in three work conferences. One of the conferences took place at a hospital, and the other two were organised at a university. We report on how the participants perceived the learning conditions and outcomes of the work conferences, and we compare the work conferences with each other as work-related learning arenas. In so doing, we explore work-related learning via two lenses: (a) what professionals learn (i.e. learning outcomes) and (b) the conditions that appear to enable learning (see, e.g. Eraut 2011). Below, we present some theoretical considerations relating to these two aspects of work-related learning. This study focuses especially on professional agency and boundary crossing as pivotal conditions for learning. Overall, the chapter contributes to the current discussion by considering how professional agency and learning are intertwined. Further, our findings have some practical implications for how work organisations can support work-related learning.

18.2 Theoretical Considerations Regarding Work-Related Learning

18.2.1 *Individual and Collective Learning*

In recent research, work-related learning has been explored from different viewpoints. According to Cairns and Malloch (2011), learning involves change and development in individuals, groups, and work organisations. More precisely, learning is understood as acquiring knowledge, developing professional competencies, developing task performance, and changing behaviour and thinking (Eraut 2011; Fenwick 2008; Harteis and Goller 2014). It also includes increased awareness and understanding – for example, of other people and of one's own organisation (Eraut 2011; Tynjälä 2013). Furthermore, learning is conceptualised as the individual and collective construction of (new or altered) meanings and creative innovations

(Fenwick 2008; Tynjälä 2013) and as the formation and transformation of work practices and professional identities (Billett 2011; Eteläpelto et al. 2014). At the collective level, professional identity negotiations include strengthened elements of shared identifications, memberships, togetherness, and a sense of belonging within professional groups and communities (Davey 2013; Hökkä et al. 2017a).

The work conference can be viewed as an orchestrated work-related learning arena that aims to support the development of shared work practices. This implies that learning, and collective learning in particular, can occur in this context. However, individual learning can also be expected to emerge, because according to Messmann and Mulder (2011), fostering workplace innovations can also contribute to individual professionals' learning. Other scholars, too, have emphasised that varieties of learning at individual, community, and organisational levels should not be seen as separate entities; rather, there is a reciprocal relationship between various forms of learning (Fenwick 2008; Imants et al. 2013; Messmann and Mulder 2017, this volume; Valleala et al. 2015). Ideally, individual learning and organisational development would go hand in hand, and there would be orchestrated events for fostering sustainable learning in work organisations (Hökkä and Eteläpelto 2014; Labone and Long 2016; Vähäsantanen 2015).

There has been considerable discussion of how work-related learning processes can emerge and be promoted. Recent studies have emphasised that learning occurs especially via working and collaboration in the context of social interaction and via sharing experiences and reflecting on work practices (Cremers et al. 2016; Goller and Billett 2014; Kira 2010; Tynjälä 2013). In addition, recent literature has emphasised the role of professional agency and boundary crossing in work-related learning. Utilising these promising theoretical insights into (orchestrating) work-related learning, the sections below focus on the role of professional agency and boundary-crossing participation in individual and collective learning.

18.2.2 Professional Agency as a Part of Learning

Although recent studies have emphasised the crucial role of professional agency in work-related learning, they have conceptualised agency differently. Some scholars understand professional agency as a capacity or disposition that enables individuals to make intentional choices and to initiate actions based on them (Goller and Harteis 2017, this volume; Harteis and Goller 2014). In addition, professional agency has been understood as constituted by individual actions – including influencing, making choices, and taking stances – in ways that make a significant difference to work practices and professional identity (Eteläpelto et al. 2014; Toom et al. 2015; Ylén 2017, this volume). In dialogical practices, agency is enacted particularly through expressing experiences and opinions, proposing and evaluating ideas and initiatives, and making suggestions relative to a given frame of action (Lipponen and Kumpulainen 2011; Valleala et al. 2015). In this paper, we take a subject-centred sociocultural approach to professional agency (Eteläpelto 2017, this volume;

Eteläpelto et al. 2013) and conceptualise professional agency mainly as a matter of influencing, making choices, expressing ideas and suggestions, and taking stances regarding work-related matters, such as individual and collective work practices.

In the workplace, the most proactive forms of agency are enacted via creative initiatives and innovative suggestions for developing work practices, creating new work operations, and transforming the course of activities (Engeström 2011; Harteis and Goller 2014; Philpott and Oates 2017; Vähäsantanen 2015). Virkkunen (2006) used the term “transformative agency” to refer to the ability and actions of individuals and groups to transform their work practices. It should always be noted that agency is both an individual and a collective phenomenon (Collin et al. 2017, this volume; Hökkä et al. 2017a). Indeed, individual and collective agency can be seen as intertwined phenomena. Even though an initial expression of agency might come from an individual, collective activities and interaction are needed to sustain the measure over time (Haapasaari and Kerosuo 2015).

Because manifestations of professional agency are at the heart of work-related learning, there is a need to orchestrate learning forums that can advance the enactment of professional agency. Both individual backgrounds (e.g. professional interests and competencies) and workplace conditions (e.g. workplace and management culture) should be harnessed to advance agency, which can then enable learning (Eteläpelto et al. 2013; Harteis and Goller 2014; Toom et al. 2015). Thus, familiar social relationships and positive work experiences may be drawn upon to promote agentic activities for professional learning (Vähäsantanen 2015). In a similar vein, Goller and Billett (2014) argued that the agentic utilisation and crafting of experiences are crucial for successful professional learning, and Philpott and Oates (2017) suggested that professional communities and dialogical practices serve as affordances for professional agency in learning (see also Ylén 2017, this volume). Conversely, traditional power-based professional relationships can obstruct the enactment of professional agency in learning and working contexts (Lipponen and Kumpulainen 2011; Paloniemi and Collin 2012).

In this study, we take a subject-centred sociocultural approach to professional agency (Eteläpelto et al. 2013, 2014). Thus, we view individual resources and social conditions as framing the enactment of professional agency, and we understand agency and structure as distinct but mutually constitutive phenomena. Instead of taking the viewpoint that agency is determined solely by social structures and conditions, we maintain that professional agency is embedded with and practised actively through the social conditions of work (see also Evans 2017, this volume) and that the individual has an active role in constructing and modifying the social conditions and practices in the workplace.

18.2.3 Boundary-Crossing Participation in Learning Processes

A number of scholars have discussed the pivotal importance of boundary-crossing participation for work-related learning. Fuller and Unwin (2011) emphasised that work organisations as learning environments can vary in terms of how they enable the participation of individuals in different work communities, such as teams or units. Learning at work, and the integration of personal and organisational learning, is fostered by an expansive learning environment (i.e. one that enables participation in different communities) as opposed to a restrictive environment. In line with this notion, certain studies have strongly emphasised the importance of crossing professional and organisational boundaries for transformative learning (Heiskanen and Heiskanen 2011; Hökkä and Eteläpelto 2014; Tynjälä 2013). At its best, boundary crossing involves gaining an understanding of other's perspectives and experiences in such a way that one's own practices and perspectives are transformed, which in turn results in the construction of knowledge (Akkerman and Bakker 2011). Similarly, Kira (2010) suggested that to promote regenerative learning, it is essential to organise meetings between employees across different professional units and groups in the work organisation.

In a similar vein, Alasoini (2011) emphasised that workplace innovation requires a dialogue-oriented approach. Such an approach includes the genuine participation of various professional groups (management and personnel) from work organisations. It requires professionals to be prepared to listen to each other and to be able to express their opinions in dialogue. Haapasaari and Kerosuo (2015), too, emphasised that the sustainability of innovations requires the participation of all parties in the work organisation, such that all participants have opportunities to communicate, to express their needs and concerns, and to put forward suggestions for solutions. These perspectives imply that both professional agency (understood in terms of expressing concerns and opinions and making suggestions) and participation across boundaries (including hierarchical ones) are intertwined with learning in work contexts (see also Virkkunen 2006).

18.2.4 Overview of the Theoretical Concept and Outlines for Empirical Research

This study focuses on the work conference as a venue for work-related learning. We understand learning not only as the development of work practices at individual and collective levels but also as the development of individuals' professional identities, knowledge, and behaviour. As described in the sections above, professional agency and boundary-crossing participation are crucial for both individual and collective learning. Thus, in order to foster professional learning and achieve fruitful learning outcomes, it is vital to provide affordances for the enactment of professional agency and participation across different boundaries and actors in work communities and

organisations. It appears to be essential to orchestrate the social events that create such affordances, because it is not self-evident that professional agency and boundary-crossing participation are enabled in work and learning contexts in the absence of such events (Heiskanen and Heiskanen 2011; Hökkä et al. 2017b, this volume; Kira 2010; Virkkunen 2006).

In the next section, we provide an introductory discussion of the work conference, which we view as an agency-promoting learning venue with the potential to advance boundary crossing between people from different professional groups and hierarchical positions. In this study, we expect that on one hand, professional agency can be promoted and triggered by the work conference and on the other hand, the work conference's learning processes and outcomes result from the enactment of agency by the participants.

18.3 The Work Conference as a Research Context

The work conference is a traditional method (used especially in Scandinavia) that aims to create a democratic dialogue for developing workplaces (Gustavsen and Engelstad 1986). At their best, work conferences can offer a shared and interactive learning arena in which participants can reflect on their past experiences and build a future vision of their work and organisation (Kalliola and Nakari 2007).

The work conference aims to achieve an equal and democratic dialogue via specific ground rules, which are introduced as guidelines for interaction (Gustavsen and Engelstad 1986). These include valuing the work experience of each staff member and grounding the dialogue on the principle of reciprocal communication. The rules function as a facilitating measure, enabling all the participants to have an active voice and to be recognised in the interaction (Kalliola and Nakari 2007). The rules are thus intended to create dialogues in which all the members of work communities, from different professions and hierarchical positions, can be valued agents in the development of shared work practices. Overall, the work conference embodies a dialogue-oriented approach, according to which the participants are prepared to listen genuinely to each other and have the opportunity to express their viewpoints, critically analyse their work practices, and generate solutions via mutual discussions (Alasoini 2011). It is thus ideally a method for learning from others while enacting one's own professional agency. Professional agency receives particularly strong support from equal and democratic dialogue in the work conference, because unequal power relations can constrain professional agency.

For the purposes of planning and implementing each conference, a representative steering group was established. The steering group members represented all the stakeholders and hierarchical levels in question (i.e. employees and leaders, all professional groups). In the planning phase, the steering group agreed on the theme of the work conference. After the conference, the main task of the steering group was to take responsibility for implementing the action plans that were produced as outcomes of the conference. Accordingly, the steering group acts as a representative of

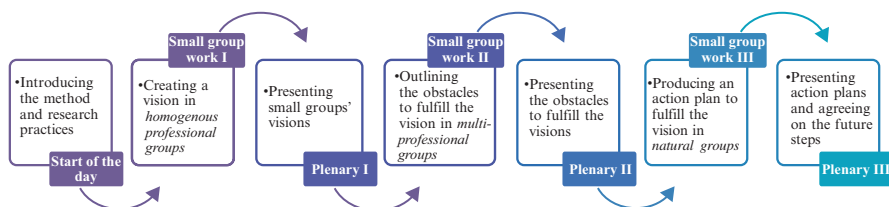


Fig. 18.1 The revised model of the work conference

and advocate for all the participants when the decisions are implemented in daily work practices after the work conference. At its best, the steering group builds bridges between conference outcomes and daily work practices, and in this way it becomes one of the factors that ensure the implementation of new ideas and initiatives in the structures of daily work.

The basic model of the work conference involves an interplay between small-group sessions and plenaries. The model includes four small-group sessions: (a) working on a vision related to the theme in homogeneous groups (i.e. professional groups), (b) working on obstacles to implementation of the vision in diagonal groups (i.e. multiprofessional groups), (c) working on ways to solve the problems in voluntary groups, and (d) creating concrete action plans in natural groups (i.e. employees who work closely together). After each small-group session, the group's outputs are presented in a plenary session. The final plenary discussion is aimed at producing a summary of the ideas put forward, noting the similarities and the differences in the experiences and looking for common ground on the basis of which concrete actions can be taken (Kalliola and Nakari 2007). In particular, working in and moving between the various small groups enable and support boundary crossing between different professionals as well as between leaders and employees.

In this study, the two work conferences conducted at a university (involving two separate units) consisted of three small-group sessions (hence integrating the basic model's second and third phases), each followed by a plenary (Fig. 18.1). Both work conferences lasted 7 h in total and focused on developing a vision for a desirable unit.

Five hours was allocated for the work conference at the hospital, so it included only two small-group sessions. The conference theme was developing patient-centredness and common rules for professionals' shared working. First, the vision for this theme was considered in homogeneous professional groups (i.e. in groups consisting of secretaries, nurses, doctors, and nursing administrative leaders). The second small-group session focused on the obstacles and action plans in natural working groups. Both small-group sessions were followed by a plenary.

18.4 Research Questions

To gain a full understanding of work-related learning in the context of the work conference, we developed two research questions: (a) How did the participants perceive the conditions for learning, and how did they perceive the immediate and short-term learning outcomes of the work conference? (b) What were the relevant similarities and differences between the three work conferences regarding their learning conditions and outcomes? Because scholars view professional agency and boundary crossing as pivotal conditions for learning, we investigated these phenomena under the first research question.

18.5 Methods

18.5.1 *Participants and Data Collection*

The three work conferences took place in 2013. The participants (92 in total) were from either a single Finnish university or a Finnish healthcare organisation. Specifically, there were 42 participants from a particular university department (academics, administrative personnel, and leaders), 23 participants from the university's administrative unit (administrative personnel and leaders), and 27 participants from the hospital (nurses, doctors, secretaries, and nursing administrative leaders). As a research data, we utilised written assessments collected immediately (i.e. at the end of the conference) and collected via email follow-up a few weeks later.

The immediate assessments (Data 1) included open-ended questions, as follows: (a) What did you think of the contents of the development day? (b) What did you think of the work conference as a developmental method? What worked, and what didn't? (c) Did you get a chance to present your own views, and was the interaction different from what you are used to in your work community? If so, how? (d) Do you have ideas about how to continue the development work? What topics should be covered? Overall, 71 participants (77%) completed these assessments. There were 30 respondents (71.5%) from the university department, 20 respondents (87%) from the university administrative unit, and 21 respondents (77.8%) from the hospital.

As a follow-up, we utilised assessments (Data 2) collected approximately 3 weeks after the work conferences. The data were collected via an electronic questionnaire and were based on the following open-ended questions: (a) What kinds of ideas did you get from the work conference in relation to your work? (b) What ideas have you put into practice in your own work since the work conference? (c) What ideas have been put into practice in your work unit? Overall, 41 (45%) of the original participants completed these assessments. There were 11 respondents (26.2%) from the university department, 16 respondents (69.5%) from the university administrative unit, and 14 respondents (51.9%) from the hospital.

18.5.2 Data Analysis

The data were analysed via qualitative and quantitative content analysis (Cohen et al. 2007; Hsieh and Shannon 2005), following three phases. In the first phase of the data analysis, we utilised the immediate assessments (Data 1) in an attempt to answer the first research question. As a first step, the data were transferred to the ATLAS.ti programme. Applying theoretical notions, the learning conditions were analysed in terms of professional agency and boundary-crossing participation. We started the data analysis by reading through the data word by word in order to achieve an understanding of the contents. We highlighted and extracted those parts of the data that captured key statements and expressions related to the research question. Afterwards, we reread all these parts and coded the expressions on a one-by-one basis. In this process (which was carried out collectively), similar expressions were marked with similar codes. Thereafter, codes with similar expressions were grouped into the same category. Finally, we organised the derived categories into a smaller number of main categories and calculated frequencies for the categories. We then identified some relevant patterns among the categories, based on the respondents' interpretations.

In the second phase of the data analysis, due to the content of the data, the follow-up assessments (Data 2) were used to investigate learning outcomes. In this phase, we utilised two categories (regeneration of the work community and individual learning) that had been generated in the first phase of the data analysis. We grouped respondents' expressions into these categories and counted the frequencies for each category. Here, the findings from the two data sets are reported together, but we do indicate the data set from which the findings emerged.

The third phase of the analysis focused on the second research question, which involves a comparison of the three conferences. This analysis was conducted by applying "thick description" (Hammersley and Atkinson 2007), based on the categories obtained from the two previous analytical phases. As an outcome of the analysis, we created three short descriptions that included the typical features and illustrations relating to each conference in order to cover their main learning conditions and outcomes. The following sections present our main findings in the light of the research questions.

18.6 The Learning Conditions and Outcomes of the Work Conferences

The analysis for the first research question resulted in a hierarchy of categories related to learning conditions and outcomes, along with their frequencies (Table 18.1). These findings are described in more detail in the following sections. The first two sections illuminate the participants' perceptions of the conditions for learning in the work conferences. The sections then illustrate how the learning

Table 18.1 Learning conditions and learning outcomes in the work conferences

Learning conditions	<i>Professional agency in dialogue</i>
	Enacted agency ($n_1 = 64$)
	Restricted agency ($n_1 = 9$)
	<i>Multivoiced participation</i>
	Boundary-crossing participation ($n_1 = 31$)
	Limited participation from the work community ($n_1 = 9$)
Learning outcomes	<i>Developmental discussions regarding work practices</i>
	Innovative discussion ($n_1 = 26$)
	Repetitive discussion ($n_1 = 18$)
	Elaborative discussion ($n_1 = 21$)
	<i>Regeneration of the work community</i> ($n_1 = 6$; $n_2 = 28$)
	<i>Individual learning</i> ($n_1 = 9$; $n_2 = 19$)

n_1 = number of respondents in immediate data ($N = 71$); n_2 = number of respondents in follow-up data ($N = 41$)

outcomes were reported concerning discussions to develop work practices, regeneration of the work community, and individual learning.

18.6.1 Professional Agency in Dialogue

Regarding learning conditions, the participants' perceptions of the work conference were mostly positive. According to 64 respondents (90.2%), the work conference was successful in terms of enabling *enacted professional agency in dialogue*. Enacted agency was manifested as expressing and presenting one's own ideas, opinions, and viewpoints and as taking stances on the issues discussed. Furthermore, the respondents reported experiences of being heard and taken seriously: they found that their views were taken into account and that people did not ignore each other. As one participant from the hospital put it: "There was a democratic way of working. Everyone got their voice heard". As well as indicating their own agency, respondents said that other participants' agency also emerged, including the agency of persons who were not usually on the front lines of discussions in their work communities:

I was able to express my ideas. Those who don't make their voices heard in everyday work were also able to speak. (University administrative unit)

The findings also indicated that professional agency was well supported, especially in the small-group work, as illustrated by a comment of an administrative employee: "I was allowed to speak more than I usually do in my work community, because it is easier in small groups, and at the same time, small-group work forces you to be active". Due to the democratic rules, some respondents also put extra effort into creating space for the participation of other, more silent members.

Moreover, the familiar content of the work conference, and its close connection to daily work, encouraged the enactment of agency by all members of the work community:

The content of the discussion was close to the everyday work, which made participation easy. Everyone can take stances on practical issues, and it is nice that you can say silly things as well. (University administrative unit)

Although most of the respondents saw the conference as an agentic learning arena, nine of them (12.7%) reported *restricted professional agency* during the work conference. This was described in terms of a lack of opportunities for exerting an influence and expressing one's opinion. From the point of view of agency, the plenaries in particular were viewed negatively. They were described as nondialogical and nonagentic, in that the interactions conformed to the hierarchical relations of the work community and failed to provide sufficient support for all members to take an active role. Thus, in the plenaries, hierarchical power relations and traditional roles were prominent rather than overcome. Furthermore, some respondents mentioned that small-group interactions were dominated by particular members.

18.6.2 *Multivoiced Participation*

The findings indicated a variety of perspectives on multivoiced participation in the work conferences. First of all, 31 respondents (43.7%) reported that *boundary-crossing participation* was possible during the work conference. Small-group sessions were experienced as workable, and several respondents valued small-group work with colleagues with whom they did not frequently collaborate in their daily work. In this sense, the conference made it possible to work in multiprofessional small groups that crossed traditional professional boundaries. In the case of the university department, boundary crossing occurred particularly between representatives from different subject groups on the one hand and administration on the other. In the hospital, multivoicedness took the form of multiprofessional discussions between leaders, doctors, nurses, and secretaries. In this way, the conference made it possible to break down rigid professional boundaries. Furthermore, within this process, the vision of the work community's future was enriched via an unusually broad interaction between different perspectives and experiences, as illustrated in the following extract:

There was valuable discussion and reflection on shared issues. Many professional groups and viewpoints were presented, which was exceptional. (Hospital)

However, nine respondents (12.7%) reported *limited participation from the work community*, because only a proportion of the work community's personnel had participated in the work conference. It was observed that only the most active colleagues had taken part in the conference, that is, the people who usually participated in developmental days. Hence, the staff was only partially represented, leading to

doubts concerning the emergence of multivoiced discussion. There was also suspicion that the absentees could obstruct implementation of the developmental suggestions. This was especially the case when powerful personalities were absent from the conference, as highlighted by a participant from the hospital: “There emerged good ideas, which will stay within these walls. Daily work will continue as usual, since not all the people in the work community were here. Dominant people were absent”.

18.6.3 *Developmental Discussions Regarding Work Practices*

The developmental discussions that emerged in the work conference were generally perceived as interesting and useful. However, the discussions were found to differ considerably in terms of their nature. According to the respondents, the developmental discussions were (a) innovative, (b) repetitive, or (c) elaborative.

Altogether, 26 respondents (36.6%) perceived the work conference as an arena for *innovative developmental discussion*. Thus, it emphasised the shared opportunity to give voice to new ideas and differing viewpoints, to create new visions, to envisage new working patterns, to make concrete suggestions, and to arrive at novel solutions for the development of shared work practices. The enabled agency of all participants, and the situation of generally working together, seemed to provide a basis for innovative discussion:

It was a good method that enabled the natural participation of everyone. Genuine developmental challenges came up, and we quite quickly found workable pathways towards solutions. (University administrative unit)

Innovative developmental discussion was further facilitated by the boundary crossing that emerged in the conference. As one respondent from the university department put it: “Changing small groups around worked well; boundary crossing between the subject-groups did occur, and ideas were developed and expanded beyond small circles of people”.

However, 18 respondents (25.3%) noticed that the conference included *repetitive developmental discussion* of work practices. As they saw it, even though the discussion was lively and important, the problem was that the same old, familiar topics were discussed, with familiar suggestions for reforming work practices. This was seen as due to the fact that the same persons regularly participate in developmental processes, as one participant from the university department noted: “Nothing radically new came up, but this was probably because it is mostly the same people who participate in developmental days”. Thus, limited participation from the work community appeared to hinder the creation of innovative ideas.

For 21 of the respondents (29.6%), the work conference seemed to create a space for *elaborative developmental discussion*. This means that the conference made it possible to reflect on, discuss, and highlight various shared topics in a concrete fashion and in terms of the organisation’s mission and core tasks. The conference

was seen as an arena for hearing ideas and for sharing knowledge with colleagues. This applied particularly to the small groups.

Overall, several developmental suggestions were made in the work conferences. For example, in the hospital conference, action plans were derived for promoting patient-centred care. These encompassed the flow of information between professional groups, collaboration within the work community, and the support given to staff and the responsibilities that management needed to be engaged (Collin et al. 2015). The main responsibility for the implementation of the developmental suggestions was allocated to the steering groups of the work conferences. In considering the outcomes, the respondents shared a concern that these should be genuinely implemented in the work community. They also feared that this would not occur.

18.6.4 Regeneration of the Work Community

In the immediate data, six respondents (8.5%) reported that the work conference had provided opportunities for getting to know the members of the work community in a new way. During the work conference, they perceived an awakened sense of togetherness that resulted from engaging in discussions in the small groups and getting to know each other. As one respondent from the university administrative unit wrote: “These kinds of shared meetings increase the sense of togetherness”. That is, participants’ professional identity at the collective level seemed to be strengthened.

Similarly, the follow-up assessments revealed changes in the work communities. According to 28 respondents (68.3%), the work conference brought the members of the work community closer to each other, made the community more close-knit, strengthened the shared understanding of developmental pathways, and increased (formal and informal) collaboration within the work community. Many respondents emphasised that they themselves had been active in the processes of bringing the desired changes to their work community:

We have started to meet up with people doing similar work from different units, because the leaders haven’t made any initiative for breaking down organisational boundaries, and they don’t actually think that this kind of breakage is needed. (University administrative unit)

In fact, the developmental suggestions created during the conference had already been implemented in the work community to some extent – for example, as elements in curriculum development and in the development of the work culture. As a consequence of the conference, there had also been more shared discussion and shared decision making, in one instance regarding the division of work in the work community. Other measures included creating practices for making initiatives, for giving feedback, and for constructing web pages in order to share information internally. However, not all the respondents saw real changes as having followed from the conference. As one respondent put it: “The day was well organised, and being

heard had an empowering effect. However, no concrete changes have taken place so far, at least not from my perspective” (University department).

18.6.5 *Individual Learning*

The findings that emerged from the immediate data revealed that *individual learning* occurred in terms of the participants’ thinking and acting. Nine respondents (12.7%) indicated that they gained a new understanding of their work and the work community from hearing the voices of their colleagues:

It was an important day, because this is the way to hear what others think and how they see things from different viewpoints, things that are so obvious to oneself. (University department)

Furthermore, some respondents perceived that they learned a new developmental method, whereas others said the work conference offered an empowering environment; thus, in a sense, it served as a work counselling session.

Altogether, 19 respondents (46.2%) in the follow-up data indicated individual learning outcomes from the conference. First of all, they had gained a better picture of their own possibilities to influence and act in their work community. This included the understanding that they were encouraged to experiment with all aspects of their work. In addition, they had constructed a more elaborate understanding of their agentic role in the work community. This was due to increased togetherness and because the conference had encouraged them to act differently within the work community. One respondent from the university department described becoming a more agentic member in the work community:

Now I present my stances more courageously. I also feel that my opinions and acts are important, and have a meaning. I complain less and try to do more. In particular, I express my opinions concerning actions and procedures.

The work conference also clarified respondents’ understanding of their work as part of the work community, and it offered ideas for developing personal work practices. New ideas and practices also emerged regarding new ways of supporting, listening to, and taking colleagues into account in the context of daily work. As one respondent from the hospital put it: “I understood that it is valuable to listen to different professional groups – each group has a slightly different perspective on matters”.

18.7 Comparison of the Work Conferences as Work-Related Learning Arenas

The working principles of the conferences were similar, despite some differences in duration and structure. The enactment of professional agency was highlighted by the respondents from all the work conferences. Furthermore, the respondents reported boundary-crossing participation fairly equally, though with rather more emphasis in the hospital context and in the university administrative unit. However, there were some differences in the learning conditions and outcomes, as reported below.

The University Department This work conference focused on building a vision for the department over a 5-year time frame. The respondents consisted of teachers, researchers, administrative personnel, and their leaders. For most of the respondents, the work conference facilitated their professional agency in dialogue, even if as compared to the other work conferences the personnel of the university department mostly reported restrictions in their agency. They were also the people most likely to note the limited participation of the wider work community and to describe the developmental discussions of the conference as repetitive. They were thus more likely to see the day as merely a continuation of old and repetitive discussions with familiar colleagues. This aspect was perceived as a possible obstacle to the generation and actualisation of innovative developmental suggestions. Most of the learning outcomes reported here related to individual learning.

The Hospital The work conference for nurses, doctors, nursing administration, and secretaries focused on patient-centredness and common rules in the work community. The respondents notably emphasised boundary-crossing participation as a valuable activity. The work done in the changing small groups offered a new learning arena for collaboration with other professionals. The work conference thus seemed to offer a new kind of venue for all the professionals, allowing them to learn from each other's viewpoints – as well as enabling them to share their personal viewpoints with others. However, only some respondents reported individual learning. The developmental discussion was mostly seen as elaborative, although some concrete suggestions were also presented. The success of the conference was questioned by some respondents, because the developmental suggestions were not subsequently implemented in the work community.

The University Administrative Unit Administrative personnel and their leaders worked on the vision of their dream unit during their conference. As compared to participants in the other conferences, they gave fewer accounts of restricted agency. Furthermore, they were more likely to report significantly enabled professional agency and did not report limited participation from their work community. These findings suggest that comprehensive participation and substantial agency emerged mostly within the dialogue of the administrative unit. Furthermore, as compared to participants in other conferences, they mostly viewed their developmental

discussions as innovative. Thus, in addition to individual learning outcomes, these respondents emphasised that there had been novel shared ideas and concrete suggestions for the development of the work community. This was further supported by the follow-up data: all the respondents reported that the conference had exerted positive effects on the remaking of the work community and that many suggestions had already been implemented.

18.8 Discussion and Conclusions

Overall, the work conferences, which we conceptualised as agency-promoting interventions, emerged as worthwhile work-related learning arenas. The participants' perceptions of the conferences were mostly positive regarding learning conditions, with the conferences being viewed as enabling their professional agency and participation across entrenched professional boundaries. We can conclude that learning occurred at both individual and collective levels (Eraut 2011; Tynjälä 2013). For example, on one hand, learning involved becoming a more agentic member in the work community, and on the other hand, it involved the formation of innovative developmental discussions and an increased sense of togetherness (i.e. strengthened professional identity at the collective level). Thus, the claim (Messmann and Mulder 2011, 2017, this volume) that individual learning can occur simultaneously with the broader development of the work community is supported, which indicates a close relationship between individual and collective learning (Billett 2011; Valleala et al. 2015). Below, we offer some theoretical and practical conclusions and suggest avenues for future research.

A number of scholars have emphasised the pivotal contribution of professional agency to professional learning (Billett 2011; Eteläpelto et al. 2014; Harteis and Goller 2014; Vähäsantanen 2015). From the point of view of the relationship between professional agency and learning, we suggest that agency supports work-related learning and is in a sense a central condition for learning processes. If people cannot be active agents with the opportunities to present their opinions and suggestions concerning shared work practices, it cannot be assumed that sustainable work-related learning will occur. In the context of dialogue, all the work conferences appeared to promote participants' agency in terms of expressing ideas, opinions, and viewpoints, as well as in terms of taking stances on shared work practices. In this sense, we can suggest that *dialogical agency* emerged.

The findings showed differences between the work conferences with respect to the nature (innovative, repetitive, or elaborative) of the developmental discussions and the extent of work community regeneration. As a consequence of the work conference, some real transformations also emerged in work practices. These changes seemed to occur through the activities of participants and not through those of the steering groups – even if, according to the principle of the work conference, these groups had the responsibility of implementing changes based on the suggestions made. Hence, agentic grassroots efforts may be more effective in bringing about

change than official channels. This emphasises the pivotal role of professional agency in work-related learning.

Thus far, we have discussed the role of professional agency in learning. The findings also revealed the role of participation in work-related learning. Boundary-crossing participation made possible the exchange and comparison of different perspectives and enabled people to learn from each other. In some cases, this paved the way for both individual learning and innovative discussions concerning the development of shared work practices. This study confirms the overall importance of boundary crossing for professional learning (Alasoini 2011; Kira 2010; Fuller and Unwin 2011). Furthermore, the study indicates that comprehensive participation (as opposed to limited participation) from the work community is needed for innovative developmental discussions. Such discussions, followed by actual regeneration of work communities, emerged primarily in the university administrative unit's work conference. Here, the participants reported reasonably comprehensive attendance from the work community, along with substantially enabled agency and a high degree of boundary crossing. By contrast, limited attendance from the work community (as reported in the university department's conference) seemed to limit the emergence and implementation of innovative discussion. Instead, what emerged was more of the nature of the repetitive developmental discussions.

Putting all these findings together, our main argument is that in efforts to understand and foster learning, one must take into account professional agency, boundary crossing, and comprehensive participation from the work communities in question. In this study, the importance of comprehensive participation derived from its relative absence in the work conferences. The findings further indicated that small-group work in particular, with varying participants, enabled both the enactment of professional agency and the crossing of professional boundaries. This illustrates the point that professional agency can be promoted by means of specific social practices. All in all, the social context and its resources are important for professional agency and for professional learning – even if we must always bear in mind that the ways in which individuals act and interact is central to learning (Billett 2004, 2011; Labone and Long 2016).

Despite the positive aspects of the work conferences, the participants' fear of inadequate implementation of the developmental suggestions turned out to be partly justified. Regarding the development of organisations and their practices, a crucial question is how to maintain the dynamic processes of change. Indeed, this and many other studies (e.g. Haapasaaari and Kerosuo 2015) have stressed the difficulty of putting good ideas into practice and maintaining a developmental atmosphere in organisations. In the case of the implementation of innovative ideas, it is vital to create a clear and long-term strategy for generating and monitoring activities (Kalliola and Nakari 2007; Messmann and Mulder 2011).

Regarding the work conference as a method, we emphasise that more effort is required in the orchestration of the conference, so that participants are committed to the developmental work not only in the work conference but after it as well. This involves efforts to achieve comprehensive participation from the work community and to encourage and authorise people take responsibility for implementing ideas

and taking subsequent actions. Thus, responsibility should be given to the staff as a whole – as active crafters of their work practices – rather than delegated entirely to a steering group. This kind of development regarding the work conference is needed, because in its current form it supports participants' agency during the conference but not truly after it.

The findings showed that the specific structure and practices of the work conference gave rise to an agency-promoting learning arena. The findings also revealed that the work conference partly resourced participants' agency outside the conference, not only within it. Consequently, some participants felt empowered to more actively express their opinions and stances in their work communities. Hence, the agency-promoting effect might also hold after the work conference is finished. However, because professional agency is always embedded with and enacted through social conditions, if we want to strengthen professionals' agency beyond work-related interventions, we also need to create agency-promoting structures in actual workplaces (see also Ylén 2017, this volume).

In work contexts, one candidate for enhancing individuals' professional agency and for further constructive organisational transformations is *agency-promoting leadership* (Hökkä et al. 2017c; Hökkä and Vähäsantanen 2014). Such leadership provides strong support for employees' professional agency. Leaders are encouraged to promote collaboration, interaction, and relationships; the emphasis is thus on people rather than managerial practices. In interactions based on such a principle, professionals can come together to express their perspectives and to offer suggestions regarding the work practices of their organisation. Through shared dialogue, they can also create shared knowledge across the boundaries of professions and work communities.

Despite the limitations of the study (which include the size of the data and the relatively low response rate from the respondents in the follow-up electronic questionnaire), the findings revealed respondents' immediate perceptions and provided some valuable information about learning conditions and outcomes of the work conference. A longitudinal ethnographic approach would make it possible to study the implementation of developmental suggestions over time, the longer-term learning outcomes, and the overall importance of the conference for the participants' work and work communities. We also emphasise the need for further evidence on the relationship between professional agency and learning. Although many studies have offered propositions regarding agentic efforts towards work-related learning, a stronger empirical foundation still needs to be built.

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Chapter 19

Measuring Intrapreneurship Competence as a Manifestation of Work Agency in Different Educational Settings

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19.1 Introduction

In order to face new challenges and changes in the workplace as well as to confront new opportunities in one's private life, *agency* is necessary (e.g., Billett 2009; Harteis and Goller 2014). This idea of agency is rooted in more overarching concepts such as the *human agency* theory of Bandura (2001, 2006) and the notion of *work agency* discussed in the field of workplace learning (e.g., Billett 2009; Eteläpelto et al. 2013; Harteis and Goller 2014). The principal assumption is that individuals make choices and engage in goal-oriented actions. Adopting a business perspective in this context is in line with the notion of *intrapreneurship*, which refers to entrepreneurial behaviour conducted within an existing organisation (Antoncic and Hisrich 2001). In their chapter “Intrapreneurship Competence as Manifestation of Work Agency: A Systematic Literature Review”, Wiethe-Körprich et al. (2017) demonstrate that intrapreneurship (IP) competence—as derived from the field of business research—has a significant overlap with the conceptualisation of work agency. Further, the conceptualisation of Eteläpelto et al. (2013) particularly highlights the proximity between the two. They define work agency as a “subject centred socio-cultural” concept that focuses on “creativity”, “autonomy” and “self-fulfilment”, as well as “acting as a force for change” (Eteläpelto et al. 2013, p. 47). Additionally, work agency not only encompasses “suggestions for developing existing work practices” (Eteläpelto et al. 2013, p. 47) but also exercises resistance and reforms within the organisation. In business terms, the concept of IP refers to the central aspect of the entrepreneurial behaviour of an individual

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employee within a firm, which recognises opportunities for innovation potential and the capacity to act on them within an existing bureaucracy (Antoncic and Hisrich 2001). Thereby, individual intrapreneurs seek to meet their needs for “autonomy”, “invention”, “management” or the “completion of projects”, as well as the “implementation of process changes”, within a “complex organisation” (Perlman et al. 1988, p. 14; Schönebeck 2010). It may also include collective endeavours that involve participation or collaboration within the work community or the entire work organisation (Bosma et al. 2013).

Thus, the fact that the European Union (EU) claims to foster IP in order to boost entrepreneurial thinking and innovations within existing organisations is hardly surprising (Bosma et al. 2013; European Commission 2010). At the same time, it is important to equip young adults with all the necessary competences to enable their employability in today’s ever-changing world (European Commission 2006). To meet such demands, it is necessary to define the concept of IP competence, and here we do so as a manifestation of work agency. In order to integrate IP competence within educational processes, it has to be modelled with regard to its more detailed facets. This forms the baseline for formulating curricular goals, selecting the corresponding instructional means and running adequate assessments to visualise IP competence, as well as evaluating the chosen educational measures. The C-I-A triad of Pellegrino (2010) and Achtenhagen (2012) expresses this alignment of curriculum, instruction and assessment (C-I-A). Although the necessity of the alignment is obvious, it is still mostly ignored. In the field of entre-/intrapreneurship education, the particular learning goals and corresponding constructs are often simply chosen by chance (Kyndt and Baert 2015). The instruction related to the chosen knowledge, skills and attitudes (KSA) is delivered using authentic tasks and situations (Cope 2005; Kyndt and Baert 2015; Rauch and Frese 2007; Unger et al. 2011), although they are not often tightly related to the selected goals. The evaluation is performed using self-assessment scales covering generic competences such as motivation, intelligence or intention (Kyndt and Baert 2015). Hence, insufficient attention is paid to the fact that entrepreneurial behaviour is strongly related to situational contexts as well as being influenced by various contextual factors (such as socio-cultural values and the organisational culture, but also educational settings and educational achievement/certificates) (Baron and Markman 2003; Bosma et al. 2013; Kyndt and Baert 2015; Welter 2010).

Due to these identified shortcomings, Weber et al. (2016a) conducted work within the governmentally driven ASCOT initiative and developed a theory as well as an evidence-based domain-specific IP competence model. They also created authentic related tasks and ran a technology-based performance assessment to measure IP competence within the educational setting of vocational education and training (VET). As there is no gold standard for testing the validity of such a technology-based assessment of IP competence, the group ran several validity studies in accordance with Messick (1989). First, the *content validity* was checked using an analysis of job advertisements that mirrored real labour-market requirements (Trost and Weber 2012), and a systematic literature review was conducted (Wiethe-Körprich et al. 2017). Second, by conducting thinking-aloud studies and expert ratings, the *cognitive validity* was assured by analysing the mental processes applied

when solving performance-based assessment tasks (Bley et al. 2015). Third, the *structural validity* was considered, using psychometric scaling to obtain the IP competence structure (Weber et al. 2016a). Herein, we introduce our technology-based assessment tool and demonstrate how we measured IP behaviour. Simultaneously, we completed the validity checks by examining the *construct validity* using known groups that exhibit or logically should exhibit different levels of IP competence. We aimed to determine whether differences could be found in the scores of the investigated groups. Based on prior research concerning the chances of success in entre-/intrapreneurship, we knew that context plays a decisive role in the acquisition and development of IP competence (Baron and Markman 2003; Bosma et al. 2013; Brüderl et al. 2009; Kyndt and Baert 2015; Welter 2010). Brüderl et al. (2009), for example, found that entrepreneurs with a higher level of general education have a higher probability of surviving in the market, which was also the case for entrepreneurs who have completed an apprenticeship (in addition to compulsory schooling). However, the most successful entrepreneurs are those who hold an academic degree in addition to an apprenticeship certificate.

Hence, in accordance with those known groups, we conduct a comparison between groups of learners enrolled in different educational programmes. In Germany, we can differentiate between the various educational settings of general, vocational or mixed education: (1) basic general education: compulsory schooling (up to the 9th or 10th school year; with or without a certificate), (2) medium general education: *Realschule* (5th to 10th school year; intermediate school-leaving certificate); and (3) higher general education: *Gymnasium* (5th to 13th school year; advanced school-leaving certificate called the *Abitur*). Students attending basic education and the *Realschule* are regularly compelled (by means of school law) to enter into an apprenticeship lasting 2–3 years (Educational Setting 4: compulsory schooling plus apprenticeship; Educational Setting 5: *Realschule* plus apprenticeship). Students with an advanced school-leaving certificate have the opportunity to access higher education and attend university programmes such as a bachelor's degree programme (Educational Setting 6: *Gymnasium* plus bachelor's degree). Students who have completed the *Gymnasium* also have the chance to enrol in an apprenticeship programme (Educational Setting 7: *Gymnasium* plus apprenticeship). However, this decision is not necessarily final. Frequently, young adults from the *Gymnasium* decide to complete an apprenticeship within VET and then move to a university (Educational Setting 8: *Gymnasium* plus apprenticeship plus bachelor's degree). Herein, our focus is on the influence of these different educational settings on the development of IP competence.

Our investigation involved comparing the IP competence scores of learners from Educational Settings 5 to 8¹ and checking whether the tendencies of the known groups were reflected in our results. We did not intent to replicate the study by Brüderl et al. (2009), but rather we tried to isolate groups of learners with comparable

¹We focused on Educational Settings 5 to 8 as we ran the study for the apprenticeship of industrial clerks (*Industriekaufleute*) and bachelor's studies in business because we did not find learners with the other settings within our sample.

educational settings from a nationwide sample collected as part of the ASCOT project (Weber et al. 2016a), as well as from a bachelor's degree programme conducted in the Faculty of Business Administration at our university. We developed a tentative expectation regarding the achievement of IP competence on the part of groups attending particular educational settings.

To assess the influences of the different educational settings, we ran our research under three perspectives. First (RQ1), we asked whether and how different levels of general education contribute to the achievement of IP competence. Second (RQ2), we analysed whether completing an apprenticeship programme as it is run in Germany additionally boosts the achievement of IP competence. Third (RQ3), we considered whether completing an apprenticeship could compensate for the effects of general education with regard to the achievement of IP competence.

The dependent variable—as the central basis for comparing the different educational settings—is the IP competence as determined by the results of technology-based assessment tasks. Therefore, the learners' test item responses were scaled up using an item response theory (IRT) model.² A central assumption of such models is that the solution probability of the tasks and items contained within an authentic IP situation depicts the individual IP competence. The independent variable is represented by the four different educational settings, Educational Settings 5 to 8.

In the following, we introduce the theoretical underpinnings said to match the concepts of work agency and IP. We then deliver an operationalisation of IP as understood to be a manifestation of work agency in the context of the German industrial clerk apprenticeship programme. We focus on this apprenticeship because it is one of the most commonly chosen programmes in the field of business and commerce (BIBB 2016) and it covers a nationally and internationally broad range of typical tasks and affordances in this field (see Breuer et al. 2009). In the next step, we highlight the authentic real-life tasks implemented within the technology-based platform in order to evoke situation-specific IP performance (Weber et al. 2016a). These tasks also serve to generate data for our comparison. Therefore, the focus of this assessment tool is not simply on knowledge but, rather, on applied knowledge and skills in the fields of business relevant to the four educational settings under investigation. Next, the scaling procedure related to a partial-credit model (PCM; Master 1982) constituting part of IRT is briefly introduced in order to provide an idea of how to interpret the dependent variable. The results are then displayed, categorised according to the four educational settings and analysed by means of ANOVAs. In the final section, we conclude our study by highlighting the results, suggesting the possible educational impacts of the research, discussing the possible limitations and offering suggestions for future research.

²Item response theory (IRT) is the statistical procedure used by the PISA studies in the field of compulsory education. Its major advantage compared to classical test theory is that it also takes into account the wrong test answers of the testees (de Ayala 2009; Embretson 2010; Hartig et al. 2012; Pellegrino et al. 2014; Pellegrino et al. 2016).

19.2 Theoretical Considerations

19.2.1 *Matching Work Agency and Intrapreneurship Competence*

19.2.1.1 Work Agency

By means of their extended multidisciplinary literature review, Eteläpelto et al. (2013) summarised the concept of work agency as a subject-centred socio-cultural endeavour with a life-long learning perspective. Hence, work agency can be defined as a process by which an individual is challenged by certain socio-cultural and material constraints. Therefore, for example, material circumstances, physical artefacts, power relations, work cultures, discourses and subject positions represent situational affordances and contexts. In addition to an individuals' identities (commitments, ideals, motives, interests and goals), their knowledge, competencies and work experiences are important dispositions enabling them to act in current situations and plan and design future goals. Furthermore, agency manifests itself in individuals' communication, choice making, stances and other attitudes. In that way, it has an impact on work behaviour when suggesting new or maintaining existing work practice or struggling against suggested changes. Employees—as desiring, creating and relational people—bring their capacities into both working life and organisational participation. This agentic behaviour may boost the development of organisations in an innovative way (Eteläpelto et al. 2013; Fuller and Marler 2009).

19.2.1.2 Intrapreneurship Competence

Following the approach of Pinchot (1985), Antoncic and Hisrich (2001) and Perlman et al. (1988), as well as the literature review by Wiethe-Körprich et al. (2017, this volume), we adopt an individualistic perspective on IP. In this sense, intrapreneurs are understood to be innovatively behaving individuals who act like entrepreneurs, albeit within an existing company. They operate across formal positions or hierarchical levels, either alone or in collective endeavours (Bosma et al. 2013). In addition, we base our considerations on several large-scale international comparative assessments of students' competence (see Blömeke et al. 2015; Weinert 2001) and on suggestions found within the field of human resource development (see Mulder et al. 2009; Winterton 2009). They refer to a holistic concept of competence, since they consider not only individuals' dispositions but also their situation-specific skills as relevant when they are confronted with certain domain-specific affordances. Therefore, the mastering of entrepreneurial challenges becomes manifest through a concrete and observable performance. This observable evidence can be used to infer the latent underlying construct of IP competence (Pellegrino et al. 2016). The IP behaviour leads to, at the very least, an incremental innovation outcome (Draeger-Ernst 2003). Considering this conceptualisation, it becomes clear

that work agency includes IP competence, while IP competence can be perceived as a manifestation of work agency.

Based on these considerations, as well as on the literature review conducted by Wiethe-Körprich et al. (2017, this volume), we have conceptualised IP competence in detail. Employees engage in entrepreneurial endeavours when satisfying their need for autonomy, invention, management or the completion of projects within a complex organisation (Perlman et al. 1988). Such endeavours include manifold domains: seeking new opportunities to extend the scope for new business initiatives in related or partially related areas; developing or launching new products, services, markets and/or technologies; establishing new business units, a new establishment or a subsidiary; and strategic renewal procedures such as redefining the company's mission, constructing a new business model, reformulating a competitive strategic basis and acquiring or generating new skills (Antoncic and Hisrich 2001; Bosma et al. 2013; Covin and Miles 2007; Dess et al. 2003; Guth and Ginsberg 1990; Jones 2005; Pinchot 1985). The systematic literature review conducted by Wiethe-Körprich et al. (2017, this volume) highlights how mastery of these entre-/intrapreneurial challenges requires a variety of knowledge, skills and attitudes (KSA). Examples such as domain-specific knowledge, proactiveness, creativeness, innovativeness, self-monitoring, social competencies, persistent behaviour, achievement motivation and self-efficacy make the proximity to independent entrepreneurs clear (see also Bosma et al. 2013; Dess et al. 2003; Jones 2005). Research has shown that these KSA can be acquired and developed through teaching and learning processes (Bjornali and Støren 2012; Hornsby and Goldsby 2009; Thornberry 2003). According to Pinchot (1985) and Bosma et al. (2013)—to whom the introduction of the term IP is usually attributed—these various dispositions (i.e., KSA) can be structured along the typical process of IP activities:

- (a) perceiving problems and chances,
- (b) creating new IP ideas,
- (c) planning and monitoring IP projects on the basis of a new IP idea,
- (d) implementing IP projects,
- (e) reflecting IP ideas/projects and
- (f) selling IP ideas/projects.

These aspects can be divided into two overarching dimensions: (I) “idea generation”, which includes IP behaviours (a) and (b), and (II) “planning and implementing”, which includes IP behaviours (c) to (f). The IP dispositions (KSA) become more specified due to situational affordances and observable entrepreneurial behaviour. Evidence of the corresponding acquired latent IP competence (dispositions/facets) can be found when a person, for example, creates a Gantt chart³ during the planning phase of an IP project.

IP behaviour is supported and fostered by socio-cultural factors on the macro-, meso- and micro-system levels. Examples of these include socio-cultural values,

³A Gantt chart is named after Henry Gantt (1861–1919). It is an instrument for project management that models actions on a time axis; the central goal is the visualisation of critical pathways.

organisational culture and support and the educational settings of employees (Baron and Markman 2003; Bosma et al. 2013; Kyndt and Baert 2015).

19.2.1.3 Matching the Concepts of Work Agency and Intrapreneurship Competence

The business-related understanding of IP behaviour seems to exhibit a significant overlap with the adult life-long learning-oriented assumptions of work agency. Based on this, we may assume a “coincidence” of economic and pedagogical rationality (DFG 1990).⁴ According to both concepts, the individual employee (or collective) is driven by forces such as self-fulfilment, autonomous acting and invention (dispositions) on the one hand and the realisation of a creative new idea transforming current work practice (with its embeddedness within situational affordances and the constraints of the contexts) on the other hand. Within such a process, employees are confronted with many challenges. They have to communicate with others and convince them. During such action, they have to consider their own and others’ perspectives, which enables the demonstration of empathy. Employees have to extend the scope of new initiatives, which might involve struggling with power and resistance. Furthermore, they have to apply analytical thinking, rearrange resources and solve problems. In addition, they should demonstrate persistent behaviour and maintain an enthusiastic mood (situation-specific skills). As we are dealing with a latent construct, IP competence cannot be directly observed. In contrast, the observable corresponding behaviour is taken as evidence of the underlying IP competence construct. The means by which these various dispositions, situation-specific skills and evidence can be synchronised is depicted in Fig. 19.1. We use the analogy of an iceberg to illustrate our point: The underlying non-observable latent constructs are like the bottom of an iceberg hidden beneath the water’s surface, whereas the observable IP behaviour resembles the peak of an iceberg emerging from the water.

In sum, innovative behaviour and work agency are indispensable in modern workplaces (Humburg and van der Velden 2015). Therefore, we define IP competence as a specification of these skills within the field of business. Both concepts perceive individual work agency to be embedded within a socio-cultural context, albeit with particular constraints (Baron and Markman 2003; Bosma et al. 2013, Eteläpelto et al. 2013; Kyndt and Baert 2015).

⁴For a critical discussion of this statement, see Heid (1999) and Heid and Harteis (2004).

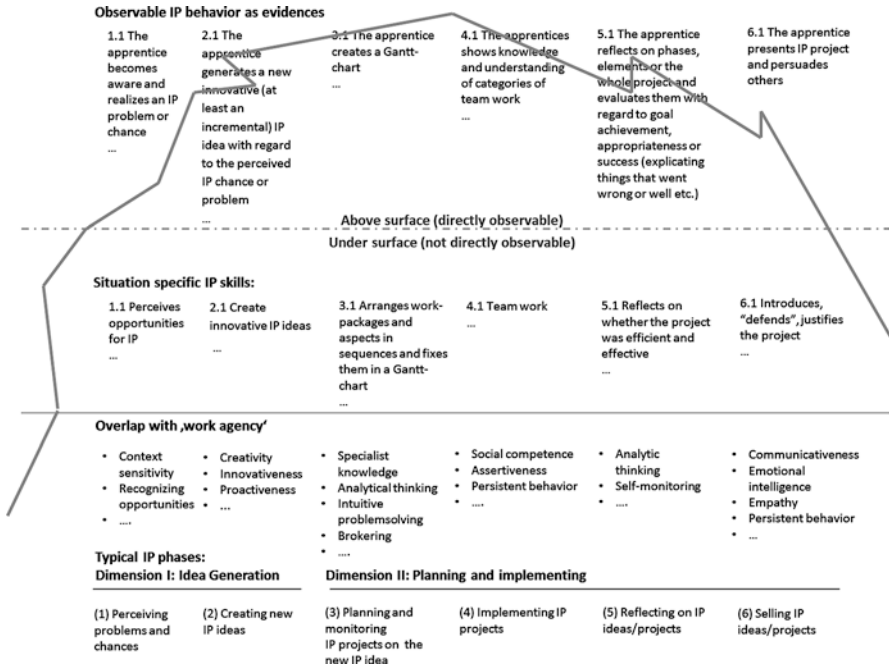


Fig. 19.1 Matching “work agency” and “IP competence” within an iceberg model

19.2.2 Measuring Intrapreneurship Competence as Manifestation of Work Agency

19.2.2.1 Making Intrapreneurship Competence Visible by Means of Measurement: A Necessary Task for Promotion

Scholars from a variety of disciplines claim that IP competence is indispensable in contemporary workplaces and life courses. Thus, for example, the experimental econometric studies of Humburg and van der Velden (2015) show that the labour market explicitly requests intra-/entrepreneurial competencies. Further, the pedagogical studies by Binkley et al. (2012, pp. 17–18) found “innovative and creative thinking and acting” to be a necessary 21st century skill. Indeed, the European Commission (2006) has prompted educational institutions to teach IP competence as an important skill in compulsory education.

In order to secure efficient ways of developing and boosting IP competence, a strong alignment between C-I-A is necessary (Achtenhagen 2012; Pellegrino 2010; Pellegrino et al. 2016). According to Pellegrino (2010), this alignment can be realised by means of three principles. First, ways and modes of required knowledge and skills have to be precisely defined (e.g., learners should know about the Gantt chart or they should create a Gantt chart) (*curricular model*). Second, authentic tasks that stimulate the learning processes necessary for enhancing the particular

goals have to be constructed (e.g., introducing the Gantt chart as a decisive business-planning tool and its elements in an abstract modus or asking the apprentice to create a Gantt chart and discuss certain entries using certain support) (*instructional task model*). Finally, assessment tasks that evoke the a priori defined learning goal's observable IP behaviour have to be developed. These observations yield evidence of linking behaviour to the desired underlying latent construct of IP competence (*assessment model*). For example, when referring to the skill of creating a Gantt chart, the assessment task should demand the corresponding behaviour and offer the necessary scope to carry it out. By means of this procedure, IP competence can be made visible as a curricular goal, a challenging learning task and an assessable output.

In order to satisfy the described principle of the C-I-A triad and strengthen the alignment, a model-based formulation and assessment of IP competence was developed as part of the ASCOT initiative. The aim was to allow for the more reliable and valid observation and measurement of the IP competence construct (Kanning 2009; Kyndt and Baert 2015; Unger et al. 2011). A further objective was to generate a solid output variable for the continuing research endeavour, for example, to develop monitoring strategies or investigate in more detail the contextual factors that foster or hinder the development of the decisive IP competence. The development took place within the context of the German dual system of VET,⁵ particularly the apprenticeship programme for industrial clerks. This focus is justified by the fact that the German industrial clerk apprenticeship programme is one of the most frequently chosen programmes in the field of business and commerce (BIBB 2016) and it covers a broad range of nationally and internationally typical tasks and affordances in this field (see Breuer et al. 2009).

Within this project, the work by Wiethe-Körprich et al. (2017, this volume), Weber et al. (2014) and Weber et al. (2015) began with an extended domain analysis in order to map out the “big picture” of the domain of IP. This included job advertisement analyses (Trost and Weber 2012), analyses of the projects apprentices run at their VET schools and their training companies (Weber et al. 2015), school book analyses (Weber et al. 2014) and extended literature reviews (Wiethe-Körprich et al. 2017, this volume). Through these analyses, it was discovered that IP is seen as a legitimised curricular goal in both learning environments in an apprenticeship: vocational schools and training companies. The curricula for both are developed and coordinated by a federal commission (see Weber and Achtenhagen 2016). Within the curriculum of the vocational schools, the so-called learning area at the end of the three-year educational programme (80 h of schooling) refers to initiating, controlling and monitoring relevant and innovative projects (e.g., Bavarian State Ministry

⁵At the moment Germany has about 330 different apprenticeships in the areas tutored by the Chambers of Industry and Commerce and the Chambers of Craftsmanship and about 50 apprenticeships in the field of business (which covers about one third of all apprentices). In an apprenticeship programme, adolescents get a work contract from a training company and work there on the shop floor 3–4 days per week. One to two days per week they attend courses in public vocational schools.

for Education and Culture 2002). At the training companies, the apprentices must run a self-organised IP project in a department of their own choosing (Federal Ministry of Justice and Consumer Protection 2002). Based on this extensive domain analysis, a competence model depicting the central IP competence dimensions/facets, situation-specific skills and the expected evidence of observable innovative behaviour was formulated (see Table 3.5 in Chap. 3 of this volume; Wiethe-Körprich et al. 2017, this volume) explicating the curricular goals.

With regard to the teaching and learning processes (instruction), the facets of IP competence are assumed to be best acquired or developed in authentic learning environments that deal with workplace-related tasks and situations (Cope 2005; Kyndt and Baert 2015; Rauch and Frese 2007; Unger et al. 2011). In accordance with that, apprentices have to initiate projects at their vocational schools to work on themes such as a new design for a graduation event, the implementation of a school newspaper or the founding of a company. During these projects, the vocational teachers guide the apprentices. The innovative projects conducted on the shop floor of the training companies cover many areas, for example, “optimised energy purchase within a municipal network”, “eRecruitment—introducing an online tool within the application process of future apprentices” and “introduction of a new index to measure productivity increases considering route planning”. To reach the identified goal, the apprentices run through the six typical phases of an IP process discussed above and thereby can experience, train and show behaviour as described in the evidence of the IP competence model (Weber et al. 2016b).

When considering the assessment, it could be noted that these skills constitute part of the final verbal exams held at the Chambers of Industry and Commerce.⁶ Therefore, apprentices have to present and defend their self-organised and implemented IP projects conducted at their training companies (which accounts for 30% of their final grade; Federal Ministry of Justice and Consumer Protection 2002). Although apprentices are seen to be working on interesting and challenging authentic IP projects under this current approach, we cannot conclude from their final certificate which facets of IP competence the apprentices perform well or with which aspects they need additional support (Klieme and Leutner 2006). In order to obtain additional sophisticated insights into human resources and visualise work-related IP competences, simulated authentic performance tasks were developed based on the competence model within the ASCOT project so that the items cover all the depicted IP competence dimensions/facets. Afterwards, they were implemented on a technology-based platform: ALUSIM (Achtenhagen and Winther 2014). The constructed tasks can be used for learning, but also for assessment. An example of these tasks is presented in the following figure. Again, our Gantt chart example as fixed within our a priori defined IP competence model is used (Fig. 19.2).

⁶It has to be noted that the intermediate and final examinations of German apprenticeships are run by the Chambers of Industry and Commerce or Craftsmanship and not by the vocational schools or enterprises. This procedure secures the nationwide acknowledgement of the achievement of the apprentices by the enterprises.

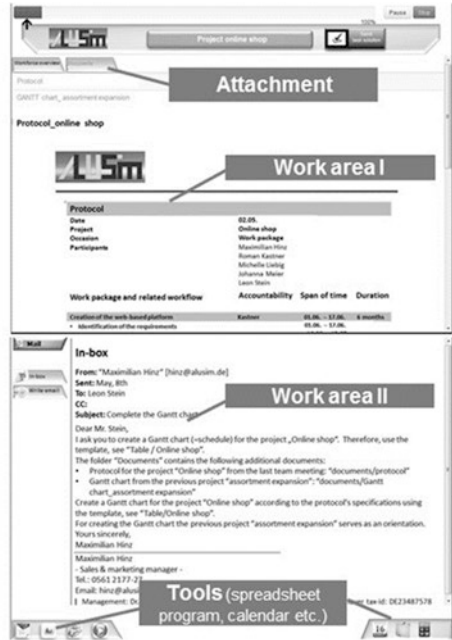


Fig. 19.2 Technology-based performance assessment

The technology-based performance assessment tool simulates scenarios concerning two typical IP actions: (1) generating new techniques for the recruitment of future apprentices in order to overcome a shortage of skilled employees (inventing new human resource strategies) and (2) implementing an online shop (creating new business ventures). These scenarios are derived from a real-world company⁷ that produces aluminium cans for beverages (e.g., Coca Cola) and cosmetics (e.g., Nivea). The authentic tasks demonstrate how the company looks for new entrepreneurial initiatives so as to exploit all available resources. ALUSIM and its particular business situations are characterised and introduced to the apprentices by means of authentic video clips. The assessment tasks and items are implemented within a simulated enterprise resource planning (ERP) system.⁸ Thereby, the apprentices are stimulated regarding their tasks and test items by means of an e-mail with attached documents via typical business communication. They have to perform their tasks—just as in real life—at the computer using typical tools such as spreadsheets, files, a

⁷The existing real-world firm is located in Göttingen, Germany. The company (which belongs to an international worldwide acting enterprise with about 100,000 employees) allowed video filming and supported the construction of an authentic learning and assessment environment. All tasks have been checked with regard to their authenticity.

⁸An ERP system (enterprise resource planning system) is an IT-based organisational tool for monitoring and managing resources and business processes. The system is grounded on a complex database representing all business activities.

calendar, a calculator etc. They have to work on the tasks and send their results to colleagues via e-mail.

In the following sections, two examples of the test formats are presented:

19.2.2.1.1 Example of Task 3 Related to Dimension I (Idea Generation)

Within a simulated team meeting, the apprentices are asked to generate ideas regarding how to deal with the problem of a shortage of skilled employees. The apprentices receive a political text authored by an important VET institution, the Deutscher Industrie- und Handelskammertag (DIHK; the German Assembly of Chambers of Industry and Commerce), which introduces and discusses the problem. After having read and worked through the text, some quiz questions are posed to check the apprentices' understanding. The apprentices then have to generate as many new innovative means (IP ideas) as they can for attracting and recruiting young employees/apprentices to join their own company. Lastly, they have to discuss their possible solutions in an open format.

19.2.2.1.2 Example of Task 15 Related to Dimension II (Planning and Implementing)

In this task, the apprentices are asked via e-mail to create a Gantt chart for a new innovative project implementing an online shop. The aim of this task is to exploit existing production resources and create a new distribution channel. The project was discussed during a prior team meeting after being introduced by a video clip. To solve this task, the apprentices receive (attached to an e-mail) the protocol of the team meeting, a Gantt chart of a previous project, and a template for building a new Gantt chart, which could be tackled interactively like an Excel sheet.

Across the whole assessment, the tasks are related to IP behaviour, for example, "perceiving a problem from different perspectives" or "brainstorming for measures to attract potential apprentices". There are also tasks such as "creating a Gantt chart", where the apprentices have to apply specific tools; "calculating the break-even point", where they have to apply specific algorithms and "selection of a potential risk scenario", where they have to react to disturbances. Furthermore, there is a task concerning the "formulation of arguments in favour of the project's continuation", where they have to make reflected and justified decisions. In order to solve these IP challenges using the authentically simulated tasks, the apprentices have to run through the typical six phases of IP by applying the previously defined facets of IP competence (see Fig. 19.1).

The responses given by the apprentices are scored by a scoring system defined a priori in accordance with the IP competence model. Dichotomous and polytomous items are given. The solution probability for each item (item difficulty) and the IP competence for each apprentice (learners' ability) are calculated by running IRT analyses (Weber et al. 2016a).

19.2.2.2 Proving Construct Validity Using “Known Groups”

The ASCOT project provided data concerning IP competence by means of a thoroughly developed instrument (ALUSIM) that can be used as a standard for comparisons with other samples (e.g., the project reports as part of the final apprenticeship examinations). The quality of our assessment is reviewed across all phases of our study. We developed the test instruction, conducted briefings for the testers, ran training for the coders, conducted think-aloud studies with peer groups to secure the cognitive validity of the assessment tasks, and ran expert ratings with VET teachers and trainers on securing ecological validity. Hence, the measurement tool reaches an EAP/PV reliability value of 0.80 for Dimension I (idea generation) and 0.89 for Dimension II (planning and implementing) (Weber et al. 2016a). In addition, we could replicate the data structure across our local and nationwide study (Weber et al. 2016a). As we intend to distribute our technology-based performance assessment tool across a broader field—and adapt it to other vocations—we placed a special emphasis on validation. We want to determine in detail what we are measuring and whether we are measuring the modelled IP competence. Messick (1989) suggests four areas of validity that must be addressed: (1) content validity, (2) cognitive validity, (3) structural validity and (4) construct validity. We checked the content validity by running the extended domain analyses, including the systematic literature review (Wiethe-Körprich et al. 2017, this volume). The cognitive validity—regarding the cognitive processes used when solving the assessment tasks—was secured by conducting think-aloud studies (Bley et al. 2015). The structural validity could be confirmed by identifying the same two dimensions of IP competence in our data sets through our replication study (Weber et al. 2016a). With this contribution, we completed the validity checks by examining the construct validity. As there is no gold standard, we ran the construct validity check with known groups that exhibited or logically should exhibit different levels of the construct and we determined whether differences could be seen in the scores of the investigated groups. Previous research concerning the chances of success in entre-/intrapreneurship has demonstrated the decisive influence of context on the acquisition and development of IP competence (Baron and Markman 2003; Bosma et al. 2013; Brüderl et al. 2009; Kyndt and Baert 2015) and, therefore, the influence of different educational settings. Brüderl et al. (2009) specified different levels of entrepreneurial success according to the entrepreneurs’ educational careers. In particular, those who held an academic degree together with a certificate of apprenticeship (Educational Setting 8) survived the longest on the market.

19.2.2.3 Research Questions

Based on our considerations, we ran the construct validity check with known groups by raising the following research questions:

RQ1: Does the level of general education (intermediate or advanced) influence the level of IP competence? (Educational Setting 5 vs. Educational Setting 7)

- RQ2: Does enrolment in an apprenticeship—in additional to general education—boost IP competence? (Educational Setting 6 vs. Educational Setting 8)
- RQ3: Does enrolment in an apprenticeship compensate for the effects of general education with regard to the achievement of IP competence? (Educational Setting 5 vs. Educational Setting 6)

19.3 Method

19.3.1 Sample

For the data sampling process, we focused on Educational Settings 5 to 8 of the test group members' IP competence. The participants in Educational Settings 5 and 7 were taken from the data set of the nationwide ASCOT project survey (German industrial clerks at the end of their two- to three-year VET programme) (Weber et al. 2016a). The participants in Educational Settings 6 and 8 were collected from among the bachelor's degree students in our business faculty. In particular, we referred to students from the Bachelor's Degree Programme of Human Resource Education and Management, since a high percentage of students in this programme completed an apprenticeship prior to their studies. The students were in their second semester. The data sets were further differentiated with regard to the participants' previous level of education by selecting stratified random samples (Bühner and Ziegler 2009). Therefore, the data sets concerning the apprentices were grouped according to the learners' previous level of education (Educational Setting 5, Realschule with an intermediate school-leaving certificate plus apprenticeship ($N = 284$); Educational Setting 7, Gymnasium with an advanced school-leaving certificate plus apprenticeship ($N = 579$); no information on prior education (missing), $n = 64$). Of this stratified sample, a random sample of $N = 60$ of each educational setting was taken using random numbers. The group of bachelor's degree students was stratified according to the question of whether or not they had completed an apprenticeship before entering university (Educational Setting 6, Gymnasium, no prior apprenticeship and a bachelor's degree ($N = 59$); Educational Setting 8, Gymnasium, plus prior apprenticeship and a bachelor's degree ($N = 55$); no information on prior enrolment in an apprenticeship (missing), $n = 8$). With regard to the dependent variable representing IP competence, those test participants who solved all or none of the items were excluded from further analysis because no ability estimate could be calculated using the IRT procedure. The final sample consisted of $N = 233$ test participants.

As the two dimensions of IP were scaled separately, the sample had to be reduced once again for those apprentices who solved all or none of the items from the separate dimensions. Therefore, the final sample for the analysis of Dimension I (Dim I;

idea generation) consisted of $N = 225$: Educational Setting 5, $n_{\text{Realschule, apprenticeship}} = 60$; Educational Setting 7, $n_{\text{Gymnasium, apprenticeship}} = 58$; Educational Setting 6, $n_{\text{Gymnasium, bachelor}} = 54$; Educational Setting 8, $n_{\text{Gymnasium, apprenticeship, bachelor}} = 53$. Dimension II (Dim II; planning and implementing) contained $N = 229$ test participants: Educational Setting 5, $n_{\text{Realschule, apprenticeship}} = 57$; Educational Setting 7, $n_{\text{Gymnasium, apprenticeship}} = 58$; Educational Setting 6, $n_{\text{Gymnasium, bachelor}} = 59$; Educational Setting 8, $n_{\text{Gymnasium, apprenticeship, bachelor}} = 55$.

19.3.2 Instruments and Procedure

For the data collection, the technology-based performance assessment ALUSIM was applied (Weber et al. 2014). Those being tested had to work on the two scenarios dealing with the central IP challenges described above (Sect. 19.2.2.1). The test participants were allocated a maximum time of 100 min in which they had to solve 49 items (Dim I: 18 items, Dim II: 31 items). A questionnaire concerning contextual factors such as prior education was also completed. The data output was generated automatically. The items had different task formats (e.g., multiple choice, half-open tasks, fully open tasks) and they were coded post hoc dichotomously and polytomously by trained coders (Cohen's Kappa: .90; Weber et al. 2015).

19.3.3 Analysis

IRT scaling was used to answer the research questions, since this approach belongs to the probabilistic test models that explicitly allow observed behaviours (and, therefore, test scores) to be related to underlying latent traits (Hartig 2008; Hartig and Frey 2013). This is possible because the number-correct scores are assumed to be sufficient statistics (Koller et al. 2012). IRT scaling is popular within the field of educational competence measurement (Klieme and Hartig 2008; Pellegrino et al. 2014; Seeber and Nickolaus 2010) because it depicts the learners' ability and the items' difficulty on the same standardised logit scale, which sets the baseline for a criterion-specific description of competence (Hartig and Frey 2013; OECD 2016). Therefore, valuable statements are possible regarding which items will and which will not be solved with a probability of 50% as long as the ability estimate of a learner is known (Embretson 2010; OECD 2015).

To calculate our dependent variable (the individual learners' ability with respect to IP competence), we scaled up the item responses using an IRT analysis.⁹ As there are polytomous items within the sample, we referred to a PCM approach (Masters

⁹For the calculations, we used the package eRm and TAM (RStudio, Version 0.99.891; R Development Core Team 2013).

1982). Every IP dimension (Dim I, idea generation; Dim II, planning and implementing) is separately scaled assuming the one-dimensionality and identical discrimination power of all the items (Rasch 1960). This approach was justified by prior findings within the ASCOT project, since it was determined that the correlations between the two dimensions of IP were only low (Weber et al. 2016a). Within our analysis, we controlled for the reliability of the measures (EAP/PV). In addition, we also controlled for the identical discrimination power of all the items (Rasch 1960) and differential item functioning (DIF; Koller et al. 2012; Strobl 2012). Therefore, we conducted a global Andersen likelihood ratio test (ALRT; Andersen 1973; Koller et al. 2012; Strobl 2012) and a significance level of $\alpha = .05$ was chosen (Cohen et al. 1996). When the results became significant, an additional Wald test was executed (Koller et al. 2012; Strobl 2012). Due to the fact that this test looks for differences at the items' level, the chosen alpha had to be Bonferroni corrected (Dim I: $\alpha = .05 / 18 = .003$; Dim II: $\alpha = .05 / 31 = .002$).

For our comparative study between the educational settings (independent variables), we calculated ANOVAs and Scheffé procedures (Bühner and Ziegler 2009). The Scheffé procedure is the most conservative post-hoc test (Bühner and Ziegler 2009). In contrast to the Bonferroni-corrected values, it represents an integrated measure, since it takes alpha error inflation directly into account when running the ANOVA (Bühner and Ziegler 2009).

19.4 Results and Interpretation

The learners' IP competence could be measured with a good level of reliability (EAP/PV [Dim I]: .741; EAP/PV [Dim II]: .799). These values can be interpreted in the same way as Cronbach's alpha (OECD 2016). The estimates range from -3.35 to 3.55 (Dim I) and -2.42 to 3.58 (Dim II) and they are depicted in the following Wright maps (Fig. 19.3 for Dim I and Fig. 19.4 for Dim II). Every X represents the ability of the test participants, while the numbers under the line depict the item difficulty.

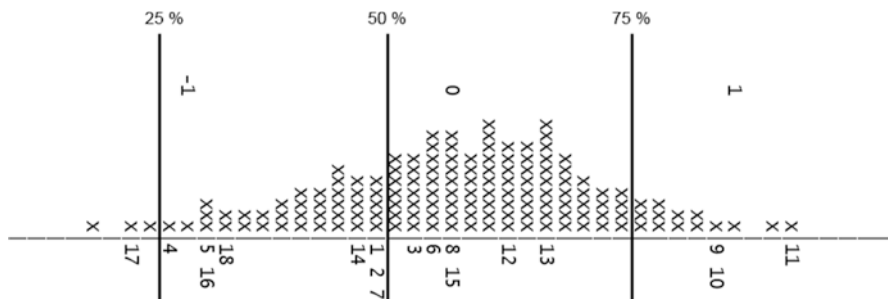


Fig. 19.3 Wright map for Dim I (idea generation). Every X represents 1.5 cases. The numbers represent assessment items, while the vertical lines represent the percentiles of item difficulties

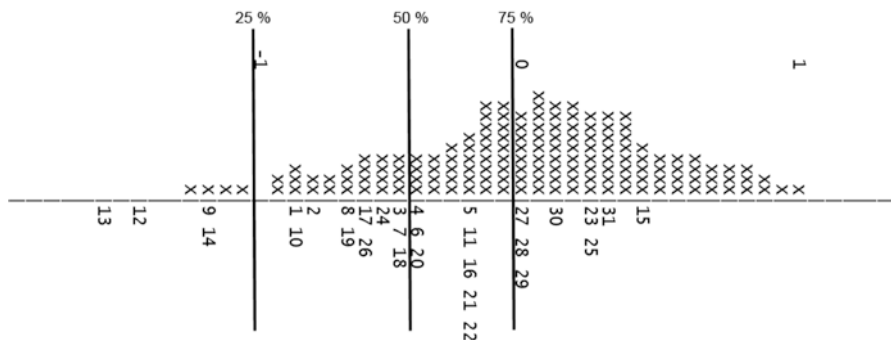


Fig. 19.4 Wright map for Dim II (planning and implementation). Every X represents 1.4 cases. The numbers represent assessment items, while the vertical lines represent the percentiles of item difficulties

In general, a Wright map provides information concerning the probability with which a person solves a specific item. In Fig. 19.4, this means that a person with an ability of -0.074 solves Item 5 (creating a Gantt chart) with an exact probability of 50%. Every item that is depicted further to the left is solved by the same test participant with a probability of more than 50%, while every item further right on the scale is solved with a probability lower than 50%. A higher person-ability estimate (positioned more to the right) expresses higher IP competence, while a higher item-difficulty estimate (positioned more to the right) expresses a higher difficulty.

In Figs. 19.3 and 19.4, the vertical lines represent the quartiles of the spread of item difficulties. Looking at the Wright maps, it becomes clear that a large number of the learners reached at least 50% (Dim I: $n = 155$, 68.9%; Dim II: $n = 194$, 84.7%) or even 75% (Dim I: $n = 11$, 4.9%; Dim II: $n = 124$, 54.1%) of the item difficulty spread. The results show that adolescents already have an impressive level of IP competence when they enter the labour market or university.

After having calculated our dependent variable of IP competence for each participant, we ran comparative analyses with regard to the different Educational Settings 5 to 8. The results displayed in Tables 19.1 and 19.2 build the foundation for our analyses.

With regard to Dim I (idea generation), Table 19.1 shows no significant results between the four educational settings. This means that the achievement of those in Educational Setting 5 who finished the Realschule with an intermediate school-leaving certificate was not significantly different from the achievement of the university bachelor’s degree students (who finished the Gymnasium with an advanced school-leaving certificate) in Educational Setting 8 who had completed an apprenticeship before starting their studies. This result may be explained by introducing Greeno et al.’s (1984) concept of *conceptual competence*, which consists of domain-specific and domain-linked knowledge. While the concept of domain-specificity is related to deeply rooted content knowledge concerning a particular domain, the concept of domain-linkage is also related to general knowledge. This means that the

Table 19.1 Comparison of IP competences in Dim I (idea generation) across the four educational settings

	Dim I (idea generation)				
	Overall sample	Apprentices ^a		Bachelor's degree students ^b	
		Educational Setting 5: <i>n</i> = 60	Educational Setting 7: <i>n</i> = 58	Educational Setting 6: <i>n</i> = 54	Educational Setting 8: <i>n</i> = 53
M	.58	.41	.59	.57	.81
SD	1.18	1.38	1.06	1.16	1.04
Range	[-3.35, 3.55]	[-3.35, 2.73]	[-2.53, 2.19]	[-2.15, 3.55]	[-3.35, 2.73]
ANOVA	F(3, 221) = 1.09, <i>p</i> = .354				
Scheffé test*	Homogeneous groups				

Note. *M* mean, *SD* standard deviation

^aGerman industrial clerk apprentices at the end of their VET programme: Educational Setting 5, Realschule plus apprenticeship; Educational Setting 7, Gymnasium plus apprenticeship

^bUniversity bachelor's degree students in their second semester: Educational Setting 6, Gymnasium, bachelor's degree; Educational Setting 8, Gymnasium, apprenticeship, bachelor's degree

**p* < .05

Table 19.2 Comparison of IP competences in Dim II (planning and implementing) across the four educational settings

	Dim II (planning and implementing)				
	Overall sample	Apprentices ^a		Bachelor's degree students ^b	
		Educational Setting 5: <i>n</i> = 57	Educational Setting 7: <i>n</i> = 58	Educational Setting 6: <i>n</i> = 59	Educational Setting 8: <i>n</i> = 55
M	.69	.17	.74	.69	1.19
SD	1.11	1.08	.97	1.18	.94
Range	[-2.42; 3.58]	[-.241, 2.43]	[-1.61, 3.58]	[-2.42, 3.58]	[-.85, 3.58]
ANOVA	F (3, 225) = 8.869, <i>p</i> = .000 ^c				
Scheffé test*		A	B	A and B	B

Note. *M* mean, *SD* standard deviation. The letters within the line displaying the Scheffé test represent the differentiable groups. Therefore, a single letter represents a significant differentiation in a single group. When more than one letter is displayed, no significant differentiation is possible.

^aGerman industrial clerk apprentices at the end of their VET programme: Educational Setting 5, Realschule plus apprenticeship; Educational Setting 7, Gymnasium plus apprenticeship

^bUniversity bachelor's degree students in their second semester: Educational Setting 6, Gymnasium, bachelor's degree; Educational Setting 8, Gymnasium, apprenticeship, bachelor's degree

^cEffect size $\eta^2 = .109$

**p* < .05

latter is related to mastering affordances in the domain based on economic literacy and numeracy. At the same time, the participant is able to understand quantitative relationships in everyday contexts and technical knowledge concerning how to handle creativity techniques or widely used standard software (Achtenhagen and Winther 2009; Winther 2010). The tasks related to Dim I (as mentioned in Task 3, recruiting new apprentices to the firm; see Sect. 19.2.2.2) may be more representative of domain-linked knowledge. Herein, the test participants had to generate as many new innovative IP ideas as they could as a means of attracting and recruiting young employees to join their company. They also had to discuss their possible solutions. This could be considered domain-linked knowledge that seems to exist across all four investigated educational settings in a comparable way. This means that—no matter which educational setting the test participants were in—they knew about special incentives for motivating other young adults to begin an apprenticeship and they had adequate judgement regarding persuasive measures.

With regard to Dim II (planning and implementing), we find an overall significant effect after running the ANOVA analysis ($F(3, 225) = 8.869$; $p < .05$; see Table 19.2). When looking for the educational settings that can be differentiated at a significance level of $\alpha = 5\%$ and applying the post hoc Scheffé test, we found two significantly different groups, namely A and B, as well as one educational setting that was assigned by the test to both groups. Learners from Educational Setting 5 (Realschule plus apprenticeship; Scheffé Group A) can be significantly differentiated from those in Educational Setting 7 (Gymnasium plus apprenticeship; Scheffé Group B) and Educational Setting 8 (Gymnasium, apprenticeship and bachelor's degree; Scheffé Group B). According to the Scheffé test, the learners in Educational Setting 6 (Gymnasium, bachelor's degree) do not show any clear differences from those in Educational Setting 5 (Group A) or those in Educational Settings 7 and 8 (Group B). Hence, they were grouped as A and B by the Scheffé test. Taking the mean values of the IP competences, we can rank the investigated educational settings in the following order: Educational Setting 5 (Realschule, apprenticeship) < Educational Setting 6 (Gymnasium, bachelor's degree) < Educational Setting 7 (Gymnasium, apprenticeship) < Educational Setting 8 (Gymnasium, apprenticeship, bachelor's degree).

As we only found differences with regard to Dim II (planning and implementing), the answers to our research questions are only related to that dimension. With regard to RQ1, we asked whether the level of general education (intermediate or advanced) influences the level of IP competence. Therefore, we compare Educational Setting 5 with Educational Setting 7. The results show that the participants with a higher level of general education (Educational Setting 7: Gymnasium, apprenticeship) achieve on average a higher level of IP competence than those learners with a lower level (Educational Setting 5: Realschule, apprenticeship). Although the lowest IP competence score of Educational Setting 7 is far beyond the lowest score of Educational Setting 5, the participants with the lower educational level (Educational Setting 5) did not reach the highest IP score of Educational Setting 7. In sum, general education matters. Those with a higher general educational level show a

better IP performance, at least in the facets of planning and implementation. This result is in line with previous findings concerning entrepreneurship education (Brüderl et al. 2009).

In RQ2 we asked whether enrolment in an apprenticeship in addition to general education boosts IP competence. Therefore, we compared Educational Setting 6 with Educational Setting 8. On average, the participants who attended all the educational programmes (Educational Setting 8: Gymnasium, apprenticeship, bachelor's degree) achieve the highest IP competence. The low standard deviation of this educational setting suggests a homogeneous group. Although Educational Setting 6 (Gymnasium, bachelor's degree) also reached the same highest score in terms of IP competence, the spread within this setting is very broad so that some participants go far beyond the achievements of Educational Setting 5 (minimum of -2.42 in Educational Setting 6 vs. minimum of $-.24$ in Educational Setting 5). This heterogeneity among the participants in Educational Setting 6 might be the reason why this setting could not be clearly assigned to either Group A or Group B. Nevertheless, in ranking the means of the educational settings by departing from the advanced school-leaving certificate (Gymnasium): $.69$ (Educational Setting 6: Gymnasium, bachelor's degree) $< .74$ (Educational Setting 7: Gymnasium, apprenticeship) < 1.19 (Educational Setting 8: Gymnasium, apprenticeship, bachelor's degree), we can assume that also completing an apprenticeship does boost IP competence. These findings can also be related to Brüderl et al. (2009).

In our last research question (RQ3), we ask whether enrolment in an apprenticeship compensates for the effects of general education with regard to the achievement of IP competence. Therefore, we compared Educational Setting 5 with Educational Setting 6. The Scheffé test categorises Educational Setting 5 (Realschule plus apprenticeship) and Educational Setting 6 (Gymnasium, bachelor's degree) into partly the same cluster of achievement and, therefore, it does not yield significant differences. This might be because the standard deviations of both settings show the highest variation within the whole sample. Therefore, both Educational Settings (5 and 6) share a significant overlap of similar (low and high) performances for the domain-specific IP competence facets of Dim II (planning and implementing). We interpret these results as meaning that the participants in Educational Setting 5 with the lowest level of previous general education (Realschule with an intermediate school-leaving certificate) do not compensate completely, although they are able to catch up to a great extent with their colleagues with a higher level of previous general education (Gymnasium with an advanced school-leaving certificate and enrolment in a bachelor's degree programme at university). Referring to our research question, we can state that apprenticeship can yield a good starting point for compensating for higher general education levels. This result also corresponds to the findings of Brüderl et al. (2009).

All our results are in line with those of Brüderl et al. (2009), who calculated entrepreneurs' chances of success with regard to their level of general and vocational education. They found university studies together with an apprenticeship to show the highest effect.

19.5 Conclusions

19.5.1 Summary

In this chapter, we investigated the widely used concept of IP competence as a manifestation of work agency. We clarified and operationalised the concept of IP competence and we examined the overlap with Eteläpelto et al.'s (2013) concept of work agency. Further, we showed how such IP competence can be modelled and measured using a technology-based performance assessment tool. As our intention is to use this tool in a broader context for various purposes, the validity aspect is a key issue. Hence, in this chapter we focus simultaneously on checking the construct validity by running a known groups comparison. In accordance with previous studies from the field of entrepreneurship research, we could define plausible groups that exhibit or logically should exhibit different levels of IP competence. We used stratified data sets from VET collected as part of the ASCOT project as well as data drawn from students enrolled in a business bachelor's degree programme and assigned the participants to four different educational settings with regard to their educational careers. Our first research question (RQ1) was related to whether and how levels of general education contribute to the achievement of IP competence. Afterwards, we investigated evidence that enrolment in an apprenticeship boosts the learning of IP competence (RQ2). With our third research question (RQ3), we considered whether enrolment in an apprenticeship can compensate for the effects of general education with regard to the achievement of IP competence. In order to answer these questions, we scaled up the learners' responses when completing the technology-based performance assessment tool ALUSIM with IRT procedures (the dependent variable). As the independent variable, we used the four identified educational settings and we ran ANOVAS.

With reference to our theoretical considerations, we found that for business research there is a significant overlap between the concept of IP competence and proactive innovative behaviour as it is conceptualised within the concept of work agency used in the field of workplace learning. Hence, we interpret our modelled IP competence as a manifestation of work agency.

The results of the comparative study concerning the four educational settings show that there are no significant differences when considering the more domain-linked Dim I (idea generation) across all the educational settings. However, differences become apparent with regard to the more domain-specific Dim II (planning and implementing). Here, we found that general education matters. This means that participants with a higher general education show a higher IP competence achievement (RQ1), although additionally completing an apprenticeship boosts IP competence. The participants in all the educational settings starting with at least an advanced school-leaving certificate who also completed an apprenticeship show, on average, a higher IP competence than those in settings without an apprenticeship (RQ 2). Participants with a lower level of general education (Realschule) are able to compensate—to a great extent—and catch up to their colleagues with a higher level

of previous general education (Gymnasium and bachelor's degree programme at university) (RQ3). With reference to our research question, we can state that apprenticeship can yield a good starting point for compensating for lower general education levels. These findings are in line with those of the GEM (Global Entrepreneurship Monitor), which showed that general education is influential for IP (Bosma et al. 2013; Brüderl et al. 2009) and that apprenticeship has an additional impact on successful entrepreneurial endeavours (Brüderl et al. 2009).

Summarising these results with regard to our overarching aim of validating the construct of IP competence by means of known groups, we identified the assumed differences and patterns in the scores for the four educational settings to a great extent—at least for the IP dimension of planning and implementation. These results, in addition to the other validity studies performed, support the assumption that this technology-based assessment tool is able to visualise IP competence.

19.5.2 Limitations and Further Research

As Educational Settings 5 and 6 especially were highly heterogeneous, it would be interesting to specify the educational settings further by using additional categories of participants' educational careers (e.g., practical experience in IP or IP-related work, grades for different school subjects) to obtain more clear group boundaries and more insights into the phenomenon of domain-linked knowledge. Other studies have shown that some IP-related potentials unfold with time and age. Thus, our results may be biased by this effect. This consideration is in line with the concept of work agency, since it is associated with life-long learning. Therefore, longitudinal studies observing developmental processes may be worthwhile; conceptual analytical tools to address developmental processes are still missing (Eteläpelto et al. 2013). The concept of IP competence and the developed technology-based performance assessment tool may represent a good starting point for investigating such developmental processes.

Furthermore, the connections within the socio-cultural context should be addressed in greater detail. In our study, we have simply focused on previous education. Yet physical artefacts, power relations, work cultures and discourses are also influential on innovative behaviour in relation to IP competence as well as work agency (Bosma et al. 2013; Eteläpelto et al. 2013; Welter 2010). Deeper insights may also arise from transfer research. This means investigating not only whether apprentices perform their demonstrated IP competencies in various other business situations within the workplace, but also whether IP competencies are practiced and manifested differently within other occupations or everyday life situations.

In terms of future research, it would also be interesting to focus not just on knowledge and skills (see also Wiethe-Körprich et al. 2017, this volume), but also on attitudes, especially issues of IP identities and beliefs, since these have not previously been considered due to reasons of statistical analysis (Klieme and Hartig 2008). For these remaining research questions, other means of analyses—qualitative or mixed

methods—should be addressed in order to capture and visualise all KSA in an integrated way. Hints and deeper insight into these relationships could also be obtained from modelling structural analyses.

In conclusion, we state that IP can be seen as a manifestation of work agency. The operationalisation and measurement of IP as demonstrated by the ASCOT project can be taken as a starting point for transferring and monitoring innovative behaviour as a necessary 21st century skill in both VET and workplace learning, since it is able to validly visualise IP. These results also demonstrate that apprenticeship programmes can foster IP—even among learners with a lower level of general education. This potential has been widely underestimated by many employers and within educational policy. This is especially true when considering the positive impact of apprentices on innovation within companies (Backes-Gellner and Rupiotta 2014).

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Chapter 20

Self-Directedness in Work-Related Learning Processes. Theoretical Perspectives and Development of a Measurement Instrument

Isabel Raemdonck, Jo Thijssen, and Maurice de Greef

20.1 Introduction

Over the years, the concept of “*self-directedness*” has been studied in a variety of domains and disciplines (e.g. educational sciences, human resources management, human resources development, psychology, economics). This widespread interest in self-directedness is explained by the underlying assumption that self-directedness leads to improved employability and success in terms of labour market outcomes and organisational performance (Guglielmino and Guglielmino 1994; Jackson 1996; Van Loo 2002). Consequently, self-directedness is considered as a key characteristic for workers both in relation to work and career as in lifelong learning.

The *knowledge economy* not only affects the work and career of those who are highly qualified. The change in nature of work and career takes place at every level in an organisation and makes self-directedness in learning an essential part of everyday work practice. Although self-directedness in learning processes has been a focus of research in a variety of domains, there is a lack of research on how *low-qualified employees* engage in these processes. Long and Morris (1995), e.g. conducted a review of the literature in 1995 related to self-directedness in learning processes in business and industry and concluded that in nearly half of the studies business managers only were used as research subjects. Since then, research studies involving lower-qualified people have not increased. According to

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Brookfield (1985), self-directed learning describes the process of learning of the majority culture and neglects many subgroups.

The purpose of this chapter is to conceptualise “self-directedness in work-related learning processes” and to develop a reliable and valid instrument to measure self-directedness in work-related learning processes which is applicable and tested also among low-qualified workers. In this chapter, we first define and characterise “self-directedness in work-related learning processes” and distinguish this concept from other related concepts. We then present a model of self-directedness which served as the basis for the scale construction. Next, the method of scale construction is outlined and four studies are presented to test validity. The chapter concludes with a summary and discussion of the results, alongside a reflection on the limitations and prospects for future research.

20.2 The Concept of Self-Directedness in Work-Related Learning Processes

We define “self-directedness in work-related learning processes” as *a characteristic adaptation to self-direct work-related learning processes that is to steer and take responsibility in diagnosing learning needs and setting goals, choosing and implementing appropriate learning strategies and evaluating and adjusting the learning process*. “Learning process” is defined as *a series of informal and formal work-related learning activities that result in the achievement of learning-related goals*, such as mastering new tasks or updating skills and knowledge. Examples of learning activities are participation at training, workshops and courses, knowledge sharing amongst colleagues, looking for information in manuals or professional handbooks, etc.

Self-directedness is characterised by the following features: (a) is changeable, (b) is an active approach, (c) centres on the attainment of the individual’s goals, (d) has a long-term focus and (e) is dynamic.

First, in contrast to a personality trait which is determined by biological factors, self-directedness is *a characteristic adaptation*. A characteristic adaptation is a psychological feature that is developed as the person encounters his or her environment, and it reflects the influences of traits, the social environment and their interaction (McCrae and Costa 1999, 2003). It is *characteristic* because it reflects the operation of enduring personality traits, and it is an *adaptation* because it is shaped in response to the demands and opportunities offered by the environment. A characteristic adaptation includes not only beliefs and attitudes but also behaviour (De Fruyt et al. 2006). It is acquired and can be more easily modified in comparison to a personality trait. A characteristic adaptation varies across cultures, families and portions of the lifespan. It thus changes over time and across circumstances in response to biological maturation, changes in the environment or deliberate interventions (McCrae and Costa 2003). Self-directedness is therefore described as a

learned characteristic that is amenable to the educative process and influenced by personal and environmental circumstances (MacKeracher 2004).

Second, self-directedness encompasses *an active approach*, in which people actively give direction to current and future learning rather than they respond passively to environmental change. Moreover, an active approach implies that the employee is persistent in overcoming barriers which would prevent the person from carrying out his/her plans. High self-directed people scan their environment more actively for opportunities than low self-directed people. Self-directedness involves self-initiated, deliberate and sustained pursuit of learning activities (Anderson et al. 2001).

Third, the individual's learning goals can be consistent with the organisational goals, but this is not a necessity. Central are the *individual's goals* and the extent to which they are helpful to the individual to retain and improve his/her employability and career. Whether the own goals are as well "pro-company" goals depends upon the characteristics of the individual's personal learning goals. Self-directedness is thus not necessarily a pro-organisational concept. Instead, the individual perspective is the main focus.

Fourth, self-directedness has a *long-term focus*. By self-directing the learning process, the employee does not only react to what is currently needed in terms of learning to guarantee his/her employability but reflects and anticipates on problems and opportunities to come in the future. The person chooses to deal with them immediately by initiating learning processes rather than wait until one *must* respond to environmental changes. This long-term perspective is an integral part in self-directing learning processes. Therefore, we speak in terms of self-directedness in learning *processes*. "Process" expresses a course or state of going on, a series of activities, a forward, developmental and continuous movement.

Fifth, self-directedness is characterised by a *dynamic process*. It is an individual's ongoing functioning in creating constant adaptation to the environment which is expressed in behaviour and regulated by cognitive (beliefs), affective (attitudes), volitional (intentions) and earlier behavioural patterns (see Fishbein and Ajzen 1975; Ajzen and Fishbein 2005). A characteristic adaptation is thus a dynamic and interactive network of beliefs, attitudes, intentions and behaviour that allows one to interact meaningfully with the social environment (McCrae and Costa 2003). Moreover, the behaviour which is expressed encompasses a complex and *cyclic process* of controlling and actively shaping the learning.

20.3 Related Constructs

The construct of self-directedness in learning processes is developed in adult education literature (Ellinger 2004; Saks and Leijen 2014). It is most closely related to, but not synonymous with, self-regulated learning, personal agency, proactive personality and personal initiative.

First, self-directedness in learning processes is connected to *self-regulated learning*. Self-regulated learning is a concept mostly used in cognitive psychology (Raemdonck et al. 2013). It is only recently that the term self-regulated learning is being used in the context of professional learning at work in a study by Littlejohn et al. (2016). Similarly to self-regulated learning, self-directedness in learning processes is also influenced by a combination of internal and external factors that form the foundation and identifies intrinsic motivation for learning as a key competence (Saks and Leijen 2014). Contrasting, self-regulated learning emphasises more on the cognitive and metacognitive components of self-monitoring, while self-directedness stresses more on the external management and shaping of the environment. Moreover, self-regulated learning is mostly used in scholarly contexts and therefore focuses more on the regulation of a single task or series of tasks to accomplish, while self-directedness in learning is more applied in learning outside the context of traditional schools and it involves the management and self-guidance of a learning trajectory as a whole (Raemdonck et al. 2005).

Second, self-directedness in learning processes is also distinguished from *personal agency* which is a concept developed in philosophy and often applied in social and behavioural sciences. The concept has been translated to the work context by Billett (2001) and has been defined as *individual's general capacities and dispositions to make intentional choices, initiate actions based on these choices and exercise control over their sense of selves and work environments* (Harteis and Goller 2014; Eteläpelto et al. 2013). Self-directedness can be interpreted as a specific instance of agency (focused on learning instead of all kind of choices). Similar to personal agency, self-directedness in learning processes is guided by the attainment of personal goals, is intentional and is based on an active approach by exercising control. Moreover, both concepts strongly emphasise the influence of internal (motivation) and environmental factors (affordances) in the actual exposure of (learning) behaviour and are therefore both situation-specific constructs instead of stable dispositions. In conceptual contributions related to both terms, researchers are often less explicit on the (meta)cognitive component in the process. Different in their approach is that personal agency stresses choice and decision making, whereas self-directedness emphasises more the importance of personal responsibility and learning.

Third, *proactive personality* derives from organisational psychology and is defined as a *relatively stable tendency to effect environmental change* (Bateman and Crant 1993, p. 103). It is considered a stable disposition to take personal initiative in a broad range of activities and situations (Seibert et al. 2001). Bateman and Crant (1993) defined a person with a prototypical proactive personality as someone who is relatively unconstrained by situational forces and who effects environmental change. *Proactive personalities* identify opportunities and act on them; they show initiative, take action and persevere until they bring about meaningful change. Conceptually, self-directedness in learning processes is a related construct, but it shows as well differences. The overlap with proactive personality is that the construct is also goal directed, intentional and based on an active approach. However, self-directedness in learning processes can be distinguished from a theoretical and

empirical point of view. First, while the proactive personality is a broad construct that is oriented towards general intention-action relationships, self-directedness is a domain-specific characteristic with specific meaning to the learning process. Second, while proactive personality refers to a *personal trait* which is more or less stable, self-directedness in learning processes refers to a characteristic adaptation which originates in the interaction of basic tendencies and environmental influences. The extent of self-directedness in learning processes is expected to change as environmental conditions and/or employee's work experiences change. Third, while proactive personality in a work-oriented context affects *proactive behaviour* that usually matches the organisational goals, self-directedness in learning processes is more centred on the individual's objectives and the extent in which the individual succeeds in realising these goals.

The relationship between self-directedness in learning processes and proactive personality is also empirically tested in this contribution. Self-directedness in learning processes should show some overlap with the proactive personality. However, to establish discriminant validity, the construct should not correlate too highly with proactive personality ($r \leq .50$).

A fourth related construct is Frese's concept of *personal initiative* (1997) developed in the domain of organisational psychology. The concept is defined as "*a behaviour syndrome that results in an individual taking an active and self-starting approach to work goals and tasks and persisting in overcoming barriers and setbacks*" (Frese et al. 1997, p. 140). The personal initiative personality measure (Fay and Frese 2001) is found to be similar to the proactive personality measured by Bateman and Crant (1993). Similar to the construct of self-directedness, the concept of personal initiative is an active construct used for describing employees' (anticipated) reactions to changes. Both constructs are goal directed and intentional. Moreover, both require a long-term focus to working life. In contrast to the proactive personality, personal initiative is closer to specific behaviours (Frese and Fay 2001). However, personal initiative refers to general initiative at work and actively dealing with work problems one encounters in an organisational context. Self-directedness specifically refers to learning. An individual's personal initiative serves pro-company goals, while self-directedness not necessarily matches the organisational goals. Personal initiative takes the framework of the organisation as the starting point, while self-directedness focuses on the individual's perspective (Table 20.1).

20.4 Model for Self-Directedness in Work-Related Learning Processes

The concept of self-directedness is recognised to be an important component in adult learning (see Knowles 1990; Brookfield 1996). However, a lot of confusion and controversy exist in relation to the concept. Various authors categorised self-directed

Table 20.1 Self-directedness (SDL) and related constructs

Related constructs	Similarities with self-directedness	Differences with self-directedness
Self-regulated learning (SRL)	<ul style="list-style-type: none"> • Both influenced by internal and external factors • Intrinsic motivation is key 	<ul style="list-style-type: none"> • SDL emphasis on external management and shaping of environment and SRL on (meta)cognitive components of self-monitoring • Learning outside context of traditional schools and management of learning trajectory (SDL) instead of scholarly contexts and regulation of single task (SRL)
Personal agency (PA)	<ul style="list-style-type: none"> • Guided by the attainment of personal goals (not necessarily pro-company goals) • Intentional • Active approach by exercising control • Scope of action is broader than single task (life course in PA or learning trajectory in SDL) • Bound up with life course agency • Situation-specific constructs • Influence of internal (motivation) and environmental factors (affordances) in the actual exposure of behaviour • (Meta)cognitive component less developed 	<ul style="list-style-type: none"> • Focus on learning (SDL) instead of all kind of choices (PA) • SDL emphasis on personal responsibility and PA on choice and decision making
Proactive personality (PP)	<ul style="list-style-type: none"> • Goal directed • Intentional • Active approach 	<ul style="list-style-type: none"> • SDL characteristic adaptation instead of PP personal trait • SDL focuses on learning, while PP is broad construct oriented towards general intention-action relationships. • SDL centres on the individual's objectives and PP favours match with organisational goals
Personal initiative (PI)	<ul style="list-style-type: none"> • Active construct used for describing employees (anticipated) reactions to changes • Goal-directed • Intentional • Require long-term focus to working life 	<ul style="list-style-type: none"> • SDL focuses on learning, while PI on general initiative at work and dealing with work problems • SDL centres on the employee's goals and PI on pro-company goals

learning as a *process-oriented approach* to learning in which people take the initiative to influence the learning experience and self-direction as a *personal characteristic* (Lounsbury et al. 2009; Zhoc and Chen 2016). In process-oriented conceptualisations towards self-directedness, self-directedness points at instructional processes in which people take the primary responsibility in learning situations. The individual controls and shapes the learning process by taking initiative for goal setting, planning, implementing and evaluating the learning process. In conceptualisations in which self-directedness is approached as a personal characteristic of the individual, self-directedness points to an individual's beliefs and attitudes, intentions and behaviour that predispose one to influence the personal learning process (Brockett and Hiemstra 1991). Self-directed learning is mainly used to describe a process-oriented approach to learning (Lounsbury et al. 2009). Until now, the process descriptions of Tough (1971) and Knowles (1975) are still the most cited in adult education literature on this subject. Both describe a process of self-directedness which is linear in nature which means that the learner follows a predefined set of steps. More recent models are interactive (Stockdale 2003; Roberson and Merriam 2005) and reflect a constructivist framework. Following insights from Brockett and Hiemstra (1991) and Garrison (1997), we integrated both views of self-directedness in our definition and conceptualised them as complementary and interrelated.

A comprehensive review of the literature on self-directed learning was conducted in order to develop a conceptual model of self-directedness in learning processes. The model stresses the importance of environmental as well as personal factors for self-directedness. *It emphasises self-directedness as a personal characteristic (i.e. characteristic adaptation) but integrates at the same time the process-oriented approach.* We first discuss the overall model and subsequently focus on the inner part of the circle.

The model of self-directedness presented in Fig. 20.1 represents self-directedness as a *characteristic adaptation*. The regulatory mechanisms (inner circle) reflect a coherent set of beliefs, attitudes and intentions and behaviour that predispose one to steer and take responsibility for the learning process. They serve as a basis for conceiving goals and plans, exercising freedom of strategy choice, executing plans and using rational reflection (outer circle). The self-directed person is able to invoke this cluster of patterns when steering the learning process (Candy 1991). *Personality traits* and the social and physical environment (both outside circle) interact with this cluster of patterns to shape the characteristic adaptation which in turn regulates the flow of self-directed behaviour (McCrae and Costa 2003). The person's actual self-directed behaviour (outer circle) is thus a result of a person's characteristic adaptation (inner circle) towards self-directedness which is in turn a result of personal traits and the environment (outside circle).

The arrows in the circle indicate that self-directedness is characterised by a *dynamic process*. This dynamic process reflects an individual's ongoing functioning in creating constant adaptation to the environment which is expressed in self-directed behaviour and regulated by cognitive (beliefs), affective (attitudes), volitional (intentions) and earlier behavioural patterns (see Fishbein and Ajzen 1975; Ajzen and Fishbein 2005). Self-directedness as characteristic adaptation is thus a dynamic and interactive network of beliefs, attitudes, intentions and behaviour that

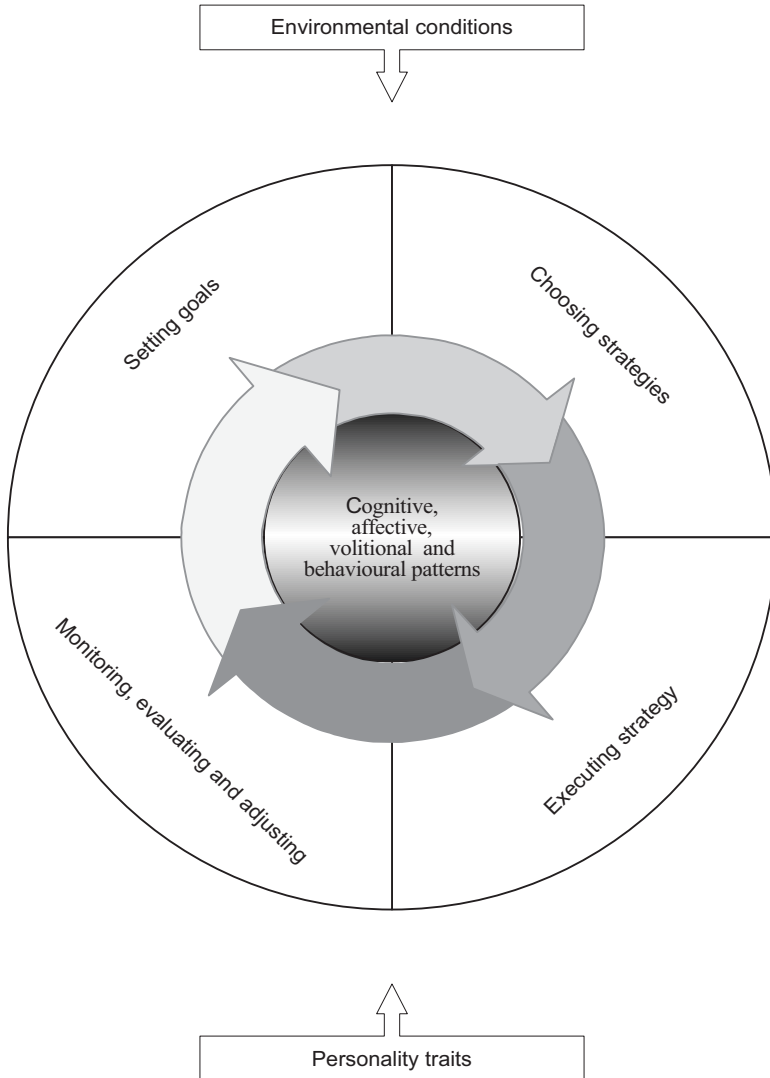


Fig. 20.1 Model of self-directedness in learning processes

allows one to interact meaningfully with the social environment (McCrae and Costa 2003). Moreover, the self-directed behaviour itself which is expressed encompasses a complex and cyclic process of steering (i.e. controlling and actively shaping the learning process).

We have focused on the operation of the system as a whole in order to explain how self-directedness as a characteristic adaptation is related to personal traits, the environment and the actual exposure of self-directedness in learning processes. We

Table 20.2 Examples of self-directedness categorised according to the components of the learning process (Based on Frese and Fay 2001)

Components	Self-directedness in learning processes
Goal setting	Anticipate on future learning needs
	Detect knowledge/skill gaps
	Diagnose personal learning needs
	Formulate learning goals
Choosing strategy	Collect information about learning opportunities
	Select appropriate strategy
	Develop a learning plan
	Identify human and material resources for learning
Execute strategy	Express learning interests
	Networking to create learning opportunities
	Ask advice to realise a learning plan
	Explore learning market and work environment
Monitoring and evaluation	Reflect on the self as a learner
	Prioritise learning
	Overcome complexity and negative emotions
	Evaluate impact of strategy (result)
	Register progress
	Adjust goals, plan and implementation

focus now on the concept of self-directedness as a coherent network of cognitive (beliefs), affective (attitudes), volitional (intentions) and behavioural patterns.

The network of cognitive, affective, volitional and behavioural patterns, which an individual requires to evoke in order to actually self-direct the learning process, relates to beliefs, attitudes, intentions and behaviour which are needed to control and shape the learning in different components of the process. A *learning process* consists of four main components: *goal setting, choosing strategies, executing the strategy and monitoring and evaluation* (see De Jong 1992; Frese and Zapf 1994; Knowles 1975). First, the person diagnoses his needs. Once a goal is established, a person looks for strategies and human and material resources and, when dealing with dynamic systems, anticipates on future outcomes. The strategy choice leads to a plan which is then executed. During plan execution, appropriated strategies are applied and the action is monitored. In case of complexity and negative emotions, the person sticks to the plan. The person evaluates the outcomes and gathers information which helps him to adjust the process (see Knowles 1975; Frese and Fay 2001). Unlike Knowles’ conceptualisation of self-directedness (1990), this process is not linear or sequential in nature but *cyclic* which means that individuals do not necessarily follow a predefined set of steps (Merriam and Caffarella 1991). However, at least each step will occur in the process. The steps are being constantly redefined during a process of self-direction (visualised with the arrows in the model).

The components of the learning process are described on the left-hand side of Table 20.2. For each component in the process, examples of self-directedness in learning processes are displayed.

The first component in Table 20.2 is *goal setting*. Learning processes are guided by goals and in turn determined by needs (Frese and Fay 2001). The next component is *strategy choice*. Possible learning opportunities are examined in the work environment or on the market. Information is collected on possible strategies that can be undertaken and the most suitable strategies are scanned to guide the learning. The individual develops a learning plan which specifies the steps to reach a goal. The third component relates to the *execution of the strategy* to be followed. The individual takes initiative to actively implement the plan that was set up. The final component in the learning process is *monitoring and evaluation*. The individual develops his or her own checks and evaluation (Frese and Fay 2001). Through monitoring, the individual evaluates if he or she is on the right track and if his/her knowledge and skills are still up to date. The individual reflects upon the learning progress. Evaluation of the (interim) outcomes can lead to the adjustment of goals, plans or the execution.

The four components in the learning process will in the construction of the scale (next paragraph) serve as a basis to generate items which reflect an individual's beliefs, attitudes, intentions and behaviour towards each of the components in the learning process. Scale items reflect an individual's beliefs, attitudes, intentions or behaviour that predispose one to steer and take responsibility in goal setting, strategy choice, application of strategies and monitoring and evaluation.

20.5 Method of Scale Construction

Our scale was developed to measure someone's beliefs, intentions, attitudes and behaviour to steer goal setting, strategy choice, strategy execution and the monitoring and evaluation of the learning process. On basis of the literature and existing instruments (Brockett and Hiemstra 1991; Guglielmino 1977; Hiemstra 2000; Knowles 1975; Oddi 1984; Stockdale 2003; Straka 1999, 2000), a large number of items were generated for each component (see Fig. 20.1 and Table 20.1) to reflect the conceptual model of *self-directedness* in *work-related learning* processes (SDL). Respondents were asked to rate each item on a 5-point Likert scale varying from 1, total disagreement, to 5, total agreement. Attention was paid to simple wording and to item content that was understandable to lower-qualified workers as we wanted the instrument to be suitable for employees of different qualification levels. Self-directed learning processes were related to both *formal and informal learning* contexts, that is, trainings and learning activities which are initiated at the workplace, for example, by exchange of work experiences between colleagues (e.g. I regularly take the initiative to exchange job experience with my colleagues). Most of the existing measurement instruments appear to measure self-directedness in only formal and school- and book-oriented learning contexts (Brockett 1985) which might disadvantage *low-qualified* employees. A learner may be highly self-directed in informal contexts with emphasis on resources other than books but paralysed in formal learning contexts (MacKeracher 2004).

A field trial was set up involving 22 employees. The majority of the participants were low qualified (i.e. employees having no diploma of secondary education). This led to item deletion due to risk for social desirability and item reformulation because of word difficulty and item complexity. Next, the item pool was reviewed by three educational experts and one expert in the field of human resources management. Following Stockdale (2003) each expert was asked to rate anonymously on a 5-point scale the strength of their agreement (5 = strongly agree) or disagreement (1 = strongly disagree) as to the representativeness of the items to the model of self-directedness in learning. Most of the item mean ratings pointed to experts' agreement or strong agreement with the representative nature of the item to the model (76.47% of the SDL items). Finally, the screening process resulted in an item pool of 31 items.

In the presented research, four studies are carried out. The first study is an exploratory analysis to identify the underlying structure of the *SDL items*. The second and third study investigates the stability of the scale structure and tests the construct, convergent validity. The fourth and last study is performed to test the invariance of the scales across a low-qualified sample and a high-qualified sample. The data was analysed with SPSS and AMOS.

20.6 Study 1

20.6.1 Purpose

The first and exploratory analysis was carried out to identify the underlying structure of the SDL items. Data collected from a sample of low-qualified and high-qualified employees were used for scale construction.

20.6.2 Sample

A sample of 940 employees was compiled involving employees from 157 organisations in the private and public sector located in Belgium. Three low-qualified employees and three high-qualified employees were selected at random from each organisation. Low-qualified employee was defined as a person without a secondary education diploma. High-qualified employees obtained at least a diploma of secondary education. The researchers were university students in educational sciences, trained to carry out the data collection. The respondents had a mean age of 38 years (range 18–60 years, $SD = 9.5$); 46.8% were male and had on average 18 years of work experience (range 6 months–45 years, $SD = 10.3$).

20.6.3 Analyses and Results

In order to investigate the underlying structure of the 31 SDL items, an exploratory principal component analysis was used with oblimin rotation since no orthogonality across components was assumed. The analyses were performed using listwise deletion.¹

A first exploratory factor analysis was conducted. A combination of methods was used to guide the extraction of components. Initially, the Kaiser-Guttman rule was employed to extract all components with eigenvalues of 1.00 or larger. Eight components were identified using this method with eigenvalues ranging from 5.58 to 1.01, accounting for 49.67% of the common variance. However, this rule is known for overestimating the number of common factors (Neto et al. 2004). Based on our conceptual model which distinguishes four components in the learning process, we extracted a four-component structure. However, the component structure did not replicate our conceptual model. Some variables showed relatively high loadings on different components and some components could not be interpreted in a meaningful way. The scree plot was examined for alternative solutions. The scree plot allowed a three, two and a one-component solution. The primordial break was observed between the first and the second component.

The first component in the matrix of the three-component structure yielded items from several components as initially put forward. The second component measured someone's response pattern that could be associated with reverse items or negatively phrased items rather than beliefs, attitudes, intentions or behaviour related to someone's self-directedness in learning processes. The third component could not be interpreted. The three-component structure explained 31.29% of the common variance with eigenvalues of 5.58, 2.38 and 1.74.

The two-component structure explained 25.68% of the total variance and demonstrated an identical pattern. Again, all *reverse items* were grouped within the same component. It appeared that a one-component model was most representative of employees' responses to the SDL scale. The SDL scale was a homogeneous construct instead of a multifactorial. The one-component model explained 18% of the variances in item responses and contained 16 items which had a factor loading $\geq .450$ (Table 20.3). The items derived from the different components as initially put forward. No reverse-scoring items were included. The Cronbach alpha of this scale was .82.

¹ The analyses were performed on the total sample. Similar high loadings were found when the data was analysed separately for the low-qualified and the high-qualified group.

Table 20.3 The component loadings of the one-component solution for the SDL scale ($N = 940$, only loadings $\geq .450$ are displayed, sorted by size)

		Component I
Item 31	I find learning an important aspect of my working life	.613
Item 7	I know when I need to learn new things for my job	.564
Item 27	I like to undertake work-related learning activities on my own initiative	.560
Item 17	Last year, I learned a lot of new things for my job on my own initiative	.545
Item 33	I regularly take the initiative to negotiate with a superior about training courses I want to follow	.524
Item 15	I talk to others about additional courses or about job experiences that can help me to realise my learning plans	.518
Item 12	The more I learn, the better I understand the world around me	.510
Item 25	I try to get involved in projects at work because they offer me opportunities to learn	.490
Item 24	I will never be too old to learn new things for my job	.489
Item 4	When I want to learn something new that can be useful for my job, I take the initiative	.488
Item 11	I quiz myself on my newly developed skills and knowledge	.484
Item 18	I regularly look for information in order to know more about topics in my field of work that interest me	.483
Item 30	I never give up when I am learning something difficult	.482
Item 34	When I want to learn something for my job, I always find the time	.458
Item 6	I strive for exchange of experiences with people who are passionate about their job	.458
Item 14	I know which steps I have to undertake when I want to learn something new	.450

Note: Item 33 and 15 were removed in the final SDL scale

20.7 Study 2

20.7.1 Purpose

The second study was carried out in order to investigate the stability of the scale structure. The study was also set up to test the construct and convergent validity.

20.7.2 Sample

In view of cross validation of the instruments, data was obtained from 408 low-qualified employees of 35 organisations from the energy sector, the chemical and food and nourishment industry located in Belgium. Per organisation at least ten

employees were selected at random. None of the organisations from the exploratory sample (see Study 1) were included in this sample. The data was collected by the first author through questionnaire and additional interviews with employees. The average age of the participants was 38.3 years (range 19–63 years, $SD = 9.8$). A majority of participants were male (65%) and had on average 20 years of work experience (range 0.5–44 years, $SD = 10.4$). Respondents with missing cases for the SDL items were removed from the sample ($n = 22$).

20.7.3 Analyses and Results

A confirmatory factor analysis (CFA) with a one-factor structure was used in order to investigate the structure stability of the SDL scale.

The CFA confirmed the underlying unidimensional structure of the SDL scale (Fig. 20.2). The results show an adequate fit between the hypothesised model and the observed data ($\chi^2 = 212.8$, $df = 104$, $\chi^2/df = 2.05$, $p < .001$). The goodness-of-fit estimates were CFI = .90, GFI = .93 and AGFI = .90. The RMSEA of .052 with a 90% interval of .042 and .062 indicates that the one-factor solution represents an acceptable approximation. Inspection of the modification indices (MI) suggested high error covariances with the pairing of item 33 and items 15, 25 and 18 and item 15 and item 25. These two items were problematic.² As a consequence, the model was respecified with item 33 and 15 deleted. This reduced the item set from 16 to 14 and improved the model fit considerably ($\chi^2 = 125.8$, $df = 77$, $\chi^2/df = 1.63$, $p < .001$). The goodness-of-fit estimates were CFI = .95, GFI = .95 and AGFI = .94 and the RMSEA was .041 (with a 90% interval of .027 and .053). The Cronbach's alpha of the SDL scale for the second sample was .81.

This second study was as well set up in order to (1) examine the relationship of the SDL scale with the Proactive Personality Scale – short version (Bateman and Grant 1993) – and (2) to examine the relationship between the scores on the SDL scale and ratings by *supervisors* on the self-directedness of their employees who have completed the scale and *interview* ratings.

20.7.3.1 Discriminant Validity: The Relationship of the SDL Scale with the Proactive Personality Scale

The *Proactive Personality Scale* measures a personal disposition towards proactive behaviour. In this study proactive personality is measured using the short version of the Proactive Personality Scale (sPPS, 10 items) as used in a study by Seibert et al.

²Evidence of large MI values with the error terms of item 33 and item 15 was as well found in a CFA performed with the sample in study 1 (total sample and low-qualified and high-qualified sample separately). We found evidence in this to conclude that these measurement error covariances represent systematic, rather than random, measurement error in item responses.

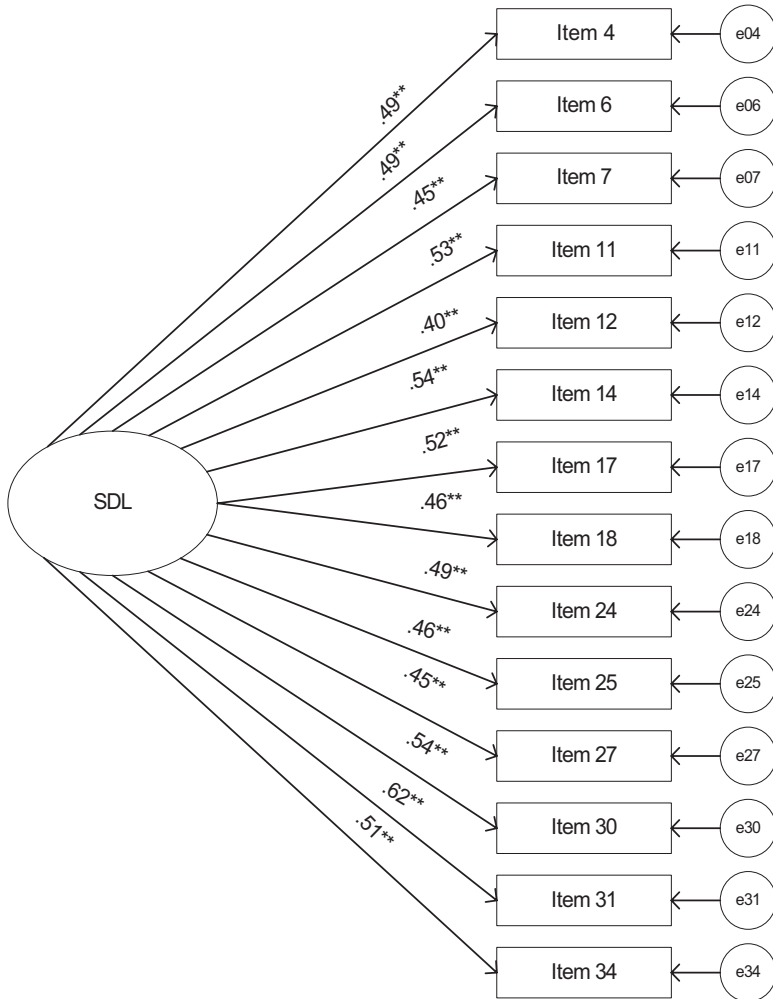


Fig. 20.2 Results of the confirmatory factor analysis: standardised factor loadings of the one-factor model for the SDL items ($N = 408$) ** $p < .001$

(1999). The Dutch version of the unidimensional scale was developed and validated by Pringels and Claes (2001). The measurement model for the sPPS fitted well ($\chi^2 = 45.2$, $df = 14$, $\chi^2/df = 3.23$, $p < .001$). The goodness-of-fit estimates were CFI = .93, GFI = .97 and AGFI = .93 and the RMSEA was .076. The Cronbach’s alpha of the sPPS was .74.

Given the fit results, the discriminant validity of the SDL scale was investigated through examining Pearson correlations with the Proactive Personality Scale. The empirical correlations were .49 ($p < .001$, $N = 408$) between the SDL scale and the sPPS scale. As hypothesised, these results suggest that “proactive personality” correlates moderately with self-directedness in learning processes.

Table 20.4 Correlations between SDL scores and supervisor ratings and interview ratings

		Supervisor rating	Interview rating
SDL score	Pearson correlations	.256 ^a	.688 ^a
	Sig. (2-tailed)	.000	.000
	<i>N</i>	391	165

^aSignificant at the .01 level

20.7.3.2 *Convergent Validity: The Relationship of the SDL Scale with Supervisor Ratings and Interview Ratings*

Participants were rated by their supervisor as to their degree of self-directedness in learning processes. A score was given on a five-point Likert scale. As documented in Table 20.4, significant positive relationships can be observed between supervisor ratings and self-reports of self-directedness based on the SDL scores, but correlations were relatively low.

A part of the sample was also rated by the researcher on basis of respondents answers to additional open questions. Based on the conceptual model of self-directedness in learning processes, the researcher gave one score on a five-point Likert scale. This was a general impression given by the researcher after the interview. Results in Table 20.4 show strong positive correlations between interview ratings and self-reports of self-directedness based on the SDL scores. Therefore, convergent validity between supervisor ratings and scores from the SDL scale and between interview ratings and scores from the SDL scale was established although the relationship between the interview ratings and scores from the SDL scale was much stronger.

20.8 Study 3

20.8.1 *Purpose*

The third study aimed to validate the stability of the scale structure in a sample taken in a different country.

20.8.2 *Sample*

Data was obtained from 787 low-qualified adult learners of 31 regional adult education centre located in the Netherlands. Per regional adult education centre, low-qualified adult learners were selected at random. In each regional adult education centre, teachers were asked to distribute the questionnaire to the

participants. The average age of the participants was 56 years (range 17–91 years, $SD = 14.4$) and 29.7% of them were male.

20.8.3 Analyses and Results

A confirmatory factor analysis with a one-factor structure was used in order to investigate the structure stability of the SDL scale. The CFA results evidenced a one-factor structure ($\chi^2 = 408.4$, CFI = 0.94, RMSEA = .074). The Cronbach's alpha of the SDL scale was .90.

20.9 Study 4

20.9.1 Purpose

In a fourth study, the final 14-item SDL scale was cross validated building on the data from the first exploratory study. The analysis was performed to test the invariance of the scale across a low-qualified sample and a high-qualified sample.

20.9.2 Sample

The low-qualified sample consisted of 476 participants. Mean age was 40 years (range 18–60 years, $SD = 9.1$). About 46.9% were male and had an average work experience of 20 years (range 6 months–45 years, $SD = 10.3$). The high-qualified sample counted 464 participants. The mean age in this sample was 36 years (range 19–58 years, $SD = 9.6$). About 46.5% were male and their average years of work experience was 15 years (range 6 months–42 years, $SD = 9.3$).

20.9.3 Analyses and Results

A *multiple group factor analysis* was carried out on the final SDL scale. As the scale was constructed for use with employees from different qualification levels, a multiple group factor analysis (equal form) was carried out to test the invariance of the scale across low-qualified and higher-qualified employees. A valid instrument implies that the one-factor model is applicable to both samples. The results of the hypothesised models are reported in Table 20.5.

Table 20.5 Fit indices of the one-factor solution for low-qualified ($n = 476$) and high-qualified employees ($n = 464$) – multiple group model

Model	χ^2	df	χ^2/df	$\Delta\chi^2$	Δdf	CFI	GFI	AGFI	RMSEA
SDL one factor (initial model)	403.3*	154	2.62	–	–	.88	.94	.92	.042
SDL one factor (constrained model)	418.7*	167	2.51	15.39	13	.87	.94	.92	.041

Note: SDL, self-directedness in learning processes; $\Delta\chi^2$, difference in χ^2 values between models; Δdf , difference in number of degrees of freedom between models; CFI, comparative fit index; GFI, goodness-of-fit index; AGFI, adjusted goodness-of-fit index; RMSEA, root mean square of approximation

* $p < .001$

The RMSEA value of .046 indicated that the one-factor model of the SDL scale is applicable for the two samples of employees. The χ^2 value for low- and high-qualified employees was 403.314 with 154 degrees of freedom, and fit indices were acceptable. Having established the good fit of this model, the invariance of parameters across groups was tested by placing equality constraints. Constraints were specified in AMOS through a labelling mechanism whereby each parameter to be held equal across groups was given a label (Byrne 2001). In testing for the invariance of this constrained model, its χ^2 value of 418.702 ($df = 167$) was compared with that for the initial model in which no equality constraints were imposed. This comparison yielded a χ^2 difference value of 15.388 with 13 degrees of freedom, which was not statistically significant ($p = .284$). The invariance of the SDL one-factor model was thus established across low-qualified and high-qualified employees.

The SDL proved to be a valid instrument for measuring self-directedness in learning processes in different samples of employees.

20.10 Discussion and Conclusions

The purpose of this chapter was to develop an instrument based on a theoretical framework specific for self-directedness in work-related learning processes which is also suitable for usage in low-qualified employees. Second, we wanted to examine reliability and validity of this instrument. After an initial item reduction, a 14-item *SDL scale* was identified measuring one factor. Further investigation of the suggested structure on independent employee samples confirmed the structure stability of the one-component model. This unidimensional structure did not respond to our initial theoretical base although a homogeneous construct was suggested because of the dynamic nature of the process of self-directedness. Self-directedness is a construct with interrelated parts. It is a dynamic, interactive and regulatory network of beliefs, attitudes, intentions and behaviour which reflects an individual's ongoing function in creating constant adaptation to the environment and is expressed

in behaviour linked to goal setting, planning, implementation and evaluation of the learning process. In reality, these different components can hardly be distinguished by participants. Further empirical evidence is needed to fully confirm the unidimensional nature of the *SDL scale*.

In the development of scales which are also developed for usage in *low-qualified adults*, it is advisable not to construct reverse-scoring items although this strategy is often advised in the development of Likert scales. In previous studies using Guglielmino's *self-directed learning readiness scale*, problems were detected as well during administration (Sisco as cited in Brockett 1985) or when interpreting component structures (Field 1989). In our study, problems occurred when interpreting the component structures. Therefore, we recommend for future studies not to use *reverse-scoring items* when dealing with a *low-qualified research group*.

The SDL scale has proven to be reliable and valid. Analysis of *discriminant validity* confirmed the positive and moderate relation between proactive personality and self-directedness in work-related learning processes. Analysis of *convergent validity* indicated positive significant correlation between self-reports of self-directedness based on the SDL scores and supervisor ratings. However, the value of Pearson correlation coefficient – although positive – was not very high. This can be explained by (1) possible participants' systematic overestimation of themselves or (2) possible supervisors' systematic underestimation of their low-qualified employees (e.g. supervisors who punish active approaches). The results correspond with findings from four other studies conducted in a higher education setting (Barnes and Morris 2000; Stockdale 2003). In these studies the relationship evaluated between the instrument developed and professor ratings even failed to detect any significant relationships. However, Crook (as cited in Stockdale 2003) found that peers were able to predict (in limited situations) self-directedness. Therefore, an interesting avenue for future validation studies would be to obtain a sample of colleague ratings. Parallel to peer students, it is expected that colleagues possess more intimate knowledge as to the self-directed activities of their colleagues, and they would be a better source for an independent rating (Stockdale 2003). In summary, positive findings in this study between the degree of an employee's self-reported self-directedness in learning and an independent rating of this same self-direction in learning by the interviewer indicates promising outcomes to establish convergent validity in future research.

A critical issue in instrument development is the chance to invoke social desirability in certain responses due to, e.g. the wording of the scale items. This can be a source of measurement error. We paid attention to social desirability in the wording of the items but did not verify this. As suggested by Stockdale (2003), adding a fake-good scale would allow to check this source of measurement errors in future validation studies.

In this chapter, we presented a model of self-directedness in work-related learning processes. Similar to what Goller and Harteis (2017, this volume) propose in relation to the concept of *personal agency*, our model was an attempt to integrate the *process-oriented approach* and *personal characteristic approach* to self-directedness. Both conceptualisations were distinguished by various authors.

On basis of our conceptual model, the SDL scale was constructed. In the development of this scale, we mainly approached the literature from an adult education perspective. In adult education literature, the *ideal adult learner* is often described as being self-directed, as having a reservoir of experience that becomes a resource for learning, as being motivated and capable to direct learning processes in response or anticipation to the tasks of their social roles (Knowles 1975; MacKeracher 2004). Authors like Merriam (2001) have contested this overgeneralisation that does not necessarily hold true for all adult learners, all learning processes or all learning contexts. With this in mind, we characterised self-directedness as a *characteristic adaptation* that develops as the learner encounters his or her environment and that reflects the influences of traits, the social environment and their interaction. Similar to Goller and Harteis (2017, this volume) and Evans (2017, this volume), our model of self-directedness in learning stresses the importance of personal as well as environmental factors in the development of self-directedness. The model clearly operates within an individual's social environment. An investigation of the influences of this social environment in future studies may be fruitful and bring further insight into the interaction between individual and contextual factors in the process of self-directing (Stockdale 2003). Up till now, research paid too little attention to that.

In relation to the main theme of *agency* at work in this book, self-directedness can be interpreted as an agentic approach towards work-related learning (Goller & Harteis 2017, this volume). It is a specific instance of agency which focuses on learning instead of all kind of choices and actions at work. Therefore, in future validation studies of the SDL scale, we recommend to include a human agency measure in order to further examine the relation between self-directedness and human agency at work and to investigate similarities and differences in the nomological network.

In conclusion, we consider it to be a contribution to the field that the SDL instrument has been developed with low-qualified workers in mind. This study brings in important evidence and knowledge on the self-directedness of *low-qualified employees*, a group that often is not included in the studies. During scale development, care was taken that scale items were relevant for low-qualified employees. Attention was paid to self-direction in informal learning contexts. The scale proves to be valid and contribute to the conceptualisations of self-directedness in learning processes. One of the strengths in the validation process is that the stability of the factor structure has been tested involving different samples (low- and high-qualified employee samples). The SDL instrument was only used in Dutch-speaking context (Flemish region of Belgium and the Netherlands). Further research must examine whether the factor structure holds well across cultural contexts.

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Chapter 21

Proactive Feedback-Seeking, Teaching Performance, and Flourishing Amongst Teachers in an International Primary School

Jade Harwood and Dominik E. Froehlich

21.1 Introduction

The increased prevalence of stress- and work-induced mental illnesses amongst teachers is a major concern for educational systems across the world (Kyriacou 2001). Existing literature reveals that when discussing meaningful careers and life courses amid rapid changes in working life, teacher agency is a concept to be delved into (Eteläpelto et al. 2013). Teacher agency is becoming a popular theme in educational, social, and psychological research that addresses professional and workplace learning. It poses the idea that teachers actively contribute to the shaping of their work and its conditions (Priestley et al. 2012) by making choices and decisions and acting accordingly (Vähäsantanen 2013). Teacher agency has been found to be a significant factor contributing to teacher professionalism, commitment, and work satisfaction (Vähäsantanen 2015), which can be used as a means for educators to establish teacher identity (Lasky 2005), to broaden their educational visions, and to derive purpose from their work (Priestley et al. 2012; Toom et al. 2015). It has also been revealed to enhance motivation, well-being, and happiness (Welzel and Inglehart 2010), in addition to autonomy and self-fulfilment (Casey 2006). Given all these positive connotations, teacher agency and the ways it is promoted and enacted in are looked at throughout this chapter. Out of all the possible ways to promote and enact on teacher agency, we put forth the argument that constant professional learning is an important way for educators to experience its benefits in the workplace. Specifically, we hypothesise that agentic, proactive feedback-seeking is an important way for teachers to learn (Froehlich et al. 2014), having consequential effects

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on the ability of educators to flourish (Keyes 2002) and perform well in the workplace. Ultimately, this suggests effects on, for instance, sick leave of teachers (Harter et al. 2003) and, hence, quality of education.

In this chapter, we present a case study of an international primary school located in Jakarta, Indonesia, that is based on both quantitative and qualitative data. We draw conclusions from a quantitative survey and interviews conducted amongst staff. The results give an indication of the applicability of our model of proactive feedback-seeking and flourishing to teacher agency in an international school context. Thus, this chapter makes several contributions that may contribute to further research on proactive feedback-seeking and teaching practices.

21.2 Theoretical Background

We consider professional agency as an individual's initiative (Holland et al. 1998) to enhance his or her well-being, or flourishing, by learning in the workplace. As highlighted by Eteläpelto et al. (2013), we view teacher agency as a rational and intentional activity that is enacted on by educators but that can be highly interdependent on social context. That is, learning in the workplace is viewed as taking place in addition to any potentially supportive resources from the sociocultural contexts of educational institutions. For instance, Vähäsantanen et al. (2017, this volume) propose that a "learning arena" is one way for educators to develop and share work practices. Although we acknowledge the plausibility of this organised work-related setting in promoting collective teacher agency, we focus on individual teacher agency in terms of learning relationships. The concept of learning relationships has received a lot of attention in literature about the dynamics of teachers' learning (Armour and Yelling 2007; Postholm and Wæge 2016). Postholm and Wæge (2016) argue that learning relationships are based on the need for educators to take part in social learning processes by being brought together to learn from each other. What's more, they reason that teachers' learning culture revolves around being listened to and taken into consideration. Therefore, educators would practise agency through metacognition and reflection in problem-solving and hence learning (Prawat 1996). In this sense, the individual plays an active and agentic role in the construction of his or her own knowledge (Packer and Goicoechea 2000). In this investigation, we seek to answer the question of how teacher agency may be promoted and enacted on in an educational setting. We propose that one way an educator can do this is by participating in proactive feedback-seeking amongst colleagues.

Proactive feedback-seeking is a learning activity that is self-initiated and a future-focused attempt to gain evaluative information about oneself or about one's work (Froehlich et al. 2015a). This behaviour, therefore, features two dimensions. First, the behaviour is proactive. This is similar to the main concept of this book, agency, in that it is about making intentional choices, initiating actions, exercising control (cf. Goller and Billett 2014), and taking ownership for learning processes (Lukic et al. 2013). A similar link has also been established elsewhere (Parker et al.

2010; Parker and Collins 2010). In the context of this study, it differs from agency as we do not intend to describe employees' general capacities and dispositions to be proactive but rather focus solely on one learning behaviour, feedback-seeking, which constitutes the second dimension. Proactive feedback-seeking is a learning behaviour that often occurs beyond formal learning arrangements during everyday work (Froehlich et al. 2014). It hinges on searching for information targeted at evaluating and reflecting upon work processes and the self (Anseel et al. 2007). This proactive component is inherent in many instances of feedback-seeking, which has also been previously identified (Ashford and Tsui 1991).

One point regarding agency in this context is the question of how autonomous the agents of proactive feedback-seeking are. The scale ranges from feedback-seeking processes that are highly determined by the social structure and leave little opportunity for autonomous action to a very liberal social network in which an actor can freely seek feedback from many sources (Monge and Contractor 2003). Friedman (2001), for example, states that independence is an important characteristic of agentic learners. On this spectrum, we position proactive feedback-seeking in the workplace in the centre. This argument is based on two premises. On the one hand, proactive feedback-seeking is a process with relatively little costs which increases the agents' autonomy. On the other hand, the social network of one's colleagues is constrained by several factors, such as geographical proximity, unawareness of certain colleagues, or the mere resources of the actor required to sustain a large network (e.g. being in frequent contact with everyone).

Feedback-seeking has been found to relate positively to different outcomes such as goal attainment (Ammons 1956), creativity (De Stobbeleir et al. 2011), performance (Kluger and DeNisi 1996), perceived career development (Van der Rijt et al. 2012), and employability (Froehlich et al. 2014, 2015b). Earlier studies have called for the inclusion of outcome variables that focus on employee well-being whilst making a business case (Baptiste 2008). We follow this call and include flourishing (Keyes 2002) and teaching performance in this study's nomological network. This also is in line with the broad suggestion by Cherkowski and Walker (2013) to do school research through positive lenses. Their *Flourishing School Approach to School Improvement* puts a premium focus on pupils' and teachers' flourishing.

Flourishing is a concept well embedded in the discussion of employees' well-being in the workplace (Diener et al. 2010; Huppert 2009; Keyes 2007) and related to emotions at work (see Hökkä et al. 2017, this volume). Employees are flourishing when they are filled with positive emotions and are functioning psychologically and socially well (Keyes 2002). Specifically, flourishing covers emotional, psychological, and social well-being. Given the breadth of the flourishing construct, many different kinds of antecedents have been explored in previous research. For instance, meditation interventions were found to affect emotional well-being in a working population (Fredrickson et al. 2008), whilst personal effectiveness trainings had an impact on the psychological resources of employees (Demerouti et al. 2011).

In this study, we argue that proactive feedback-seeking helps teachers to develop emotional, social, and psychological well-being. Specifically, teachers that proac-

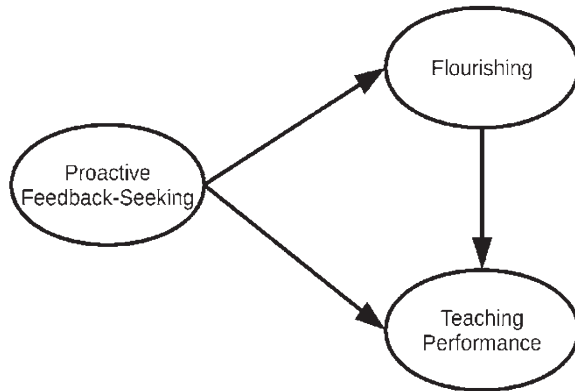
tively tackle uncertainties and anxiety through proactive feedback-seeking can more easily achieve positive well-being. This is supported by, for example, a study amongst English adults by Jenkins and Mostafa (2012) that found a positive relationship between learning activity and well-being. In a more recent study, Owen (2016) studied the relationship between teachers' learning communities and their well-being and flourishing. Her case studies show a link between learning with and through others and well-being. Also having been empirically demonstrated is the argument that proactive behaviours, generally speaking, and feedback-seeking, in particular, have a positive relationship with flourishing (Cooper-Thomas et al. 2014). Whilst our arguments and the empirical evidence point to a positive relationship between proactive feedback-seeking and flourishing, previous research also described feedback as a "double-edged sword" (Kluger and DeNisi 1998) that may also lead to negative consequences (Kluger and DeNisi 1996). This is because of the potential costs of feedback-seeking – such as a loss of reputation or an obligation to return the favour (Froehlich et al. 2015c; Van den Bossche et al. 2015). However, given the strong empirical evidence presented above, we hypothesise that the advantages of proactive feedback-seeking in terms of flourishing outweigh the risks associated with it.

Hypothesis 1 Proactive feedback-seeking has a positive relationship with flourishing.

The concept of flourishing also gives direction in investigating teachers' perceived teaching performance. This measurement of self-esteem, purpose, and optimism (Diener et al. 2010) can then be aligned with success in the form of professional performance. In line with Cotton and Hart (2003), we view flourishing also as an antecedent to teachers' teaching performance. This view is supported by previous empirical work of Wright and Cropanzano (2000), who report two studies that show evidence for a positive relationship between well-being and job performance amongst human service workers and juvenile probation officers. A recent meta-analysis across 36 quantitative studies lends further support for this argumentation, as it established a connection between emotional and social well-being (termed happiness and relationship well-being in the original study) and performance (Van De Voorde et al. 2012).

Next to this rather indirect influence of proactive feedback-seeking on teaching performance, we hypothesise that there are positive direct effects of proactive feedback-seeking on teaching performance as well. We argue that by proactively seeking feedback, teachers and teaching assistants are able to gain access to novel information that may improve their teaching practice. Related relationships were also previously identified in different contexts (Kluger and DeNisi 1996). For example, Renn and Fedor (2001) studied feedback-seeking and job performance in a sample of sales representatives. They found a positive influence of feedback-seeking on sales per hour and quality of work. These exemplary findings, which are embedded in the overall framework that proactivity and learning activities relate positively to future job performance, let us hypothesise that proactive feedback-seeking will

Fig. 21.1 Overview over the research model



show a positive relationship with job performance amongst teachers and teaching assistants.

Hypothesis 2 Proactive feedback-seeking has a positive relationship with teaching performance.

The model to be investigated in this chapter is depicted in Fig. 21.1.

21.3 Quantitative Study

To test the hypotheses, we executed a case study amongst teachers of an international primary school based in Jakarta, Indonesia. To investigate the relationships between proactive feedback-seeking, flourishing, and teaching performance, quantitative data were collected to test our hypotheses.

21.3.1 Method

We describe the method used in the quantitative survey study by noting the participants, instruments, preempting issues of common method variance, and analysis.

21.3.1.1 Participants

We invited all teachers and teaching assistants of an international primary school based in Jakarta, Indonesia ($N = 50$), to participate in a paper-based survey. A total of 42 staff members, including teachers and teaching assistants, filled out the survey (response rate = 84%). Thirty-four (81%) of the respondents were female; eight

(19%) were male. Twenty-nine (69%) of the respondents completed tertiary education. Staff members, including teachers and teaching assistants, declared to have been working at the school, prior to this study, for an average of 4.90 years ($SD = 5.52$ years).

21.3.1.2 Instruments

We measured *proactive feedback-seeking* using the five respective items of Froehlich et al.' (2017) Informal Learning from Others – Inventory (sample item: “I approached my colleagues for feedback about my work”). The respondents answered on a scale from strongly disagree (1) to strongly agree (7).

We measured *flourishing* using the eight-item Flourishing Scale by Diener et al. (2010) (strongly disagree = “1”, strongly agree = “7”; sample item: “I lead a purposeful and meaningful life”).

We gauged *teaching performance* using the original performance review form that is also used in the school. Put differently, we operationalised teaching performance in the same way it is done in the school in which this study is set. The review sheet, which contains 21 items, includes different aspects of teaching (sample items: “I draw out student prior learning, including misconceptions”, “I provide tools for students to process and make sense of information”). The teachers and teaching assistants were asked to evaluate themselves on a scale from strongly disagree (1) to strongly agree (7).

Next to this, we recorded biographical information of the respondents, such as the (main) country of origin, educational background, and experience as a teacher or teaching assistant. The questionnaire was approved by the school principal and prior to dissemination was tested using cognitive pretests. As the teachers were briefed extensively and committed to the research, the final dataset does not include missing data.

21.3.1.3 Common Method Variance

Since the teacher and teaching assistants are working together as teams, we had the opportunity to ask them for peer evaluations in an attempt to reduce the potential for common method variance (Brannick et al. 2010; Conway and Lance 2010; Podsakoff et al. 2012). For this reason, we performed a paired sample t-test, which, however, did not show statistically significant differences between the self-rating of teaching performance and the mean evaluation of others ($t(27) = 0.78$, $p = 0.44$). From this we conclude that common method variance is not a pervasive problem of this study.

21.3.1.4 Analysis

We used structural equation modelling using Partial Least Squares (PLS-SEM) with SmartPLS (Hair et al. 2014; Ringle et al. 2015) to test the hypotheses quantitatively. We have opted for this approach – and against the more common covariance-based variants of structural equation modelling – for two major reasons. First, given the very specific context of an international school in this study, we have to recognise that our previous knowledge about the relationships to be tested in this setting is limited. Given this exploratory feature of the present study, it is important to note that PLS-SEM is less affected by the limited information than covariance-based structural equation modelling, which is a full information procedure (Chin 2010). Second, the population of teachers and teaching assistants to be studied at this particular international school is rather small. Even with a hypothetical response rate of 100%, the sample size requirements of covariance-based structural equation modelling can hardly be satisfied. The PLS-SEM, being a partial information method, is less taxing in this respect and can produce sound results even with smaller sample sizes (Chin and Newsted 1999).

Following the general recommendation (Hair et al. 2014; Ringle et al. 2015), we used the path weighting scheme when running the PLS-SEM procedure. We used bootstrapping with 5000 resamples to estimate the significance of the effect sizes. However, given the rather small sample size, we give priority to interpreting the effect sizes over interpreting whether the level of significance is met or not. Specifically, we follow the general recommendation of 0.10, 0.30, and 0.50 as β -values to discriminate small, medium, and large effects, respectively (Cohen 1988).

21.3.2 Results

In reporting the results of the PLS-SEM analysis, we follow the two-step approach proposed by Chin (2010). In a first step, we checked the quality criteria of our PLS-SEM reflective measurement model. High composite reliability and acceptable Cronbach's alphas are achieved across all three major constructs, that is, proactive feedback-seeking frequency ($P_c = 0.90$, $\alpha = 0.87$), flourishing ($P_c = 0.90$, $\alpha = 0.87$), and job performance ($P_c = 0.94$, $\alpha = 0.94$). These are the values after removing two items of the Flourishing Scale that did show low (≤ 0.60) outer loadings. Thus, these items were removed from further analyses as recommended by Hair et al. (2014). The average variance extracted (AVE) values were then acceptable for all latent variables, ranging from 0.53 to 0.64; cross-loadings were not observed. In sum, all quality criteria of the reflective measurement model are met.

In a second step, we assessed the hypothesised relationships of the proposed structural model. The collinearity statistics do not indicate any problems (all VIFs ≤ 5.00). Table 21.1 shows the effect sizes and p-values of the structural model. Interestingly, no (significant) relationship between proactive feedback-seeking and

Table 21.1 Path coefficients

Predictor	Feedback-seeking			Flourishing			Performance		
	β	t	p	β	t	p	β	t	p
Feedback-seeking	–	–	–	0.006	0.021	0.983	0.304	1.691	0.091
Flourishing	–	–	–	–	–	–	0.456	2.506	0.012
Educational background	–0.269	1.778	0.076	–0.308	1.936	0.053	0.033	0.218	0.827
Gender	–0.030	0.221	0.825	0.124	0.897	0.370	0.167	1.014	0.310
Teaching experience	0.217	1.593	0.111	–0.156	1.149	0.251	0.042	0.342	0.733

flourishing was found ($\beta = 0.01$, *ns*). However, there is a medium-sized, positive relationship between proactive feedback-seeking and performance ($\beta = 0.30$, $p \leq 0.10$). Also, the relationship between flourishing and performance is rather strong, positive, and significant ($\beta = 0.46$, $p \leq 0.05$). Of the covariates, it is especially the educational background that has sizable negative relationships with proactive feedback-seeking ($\beta = -0.27$, $p \leq 0.10$) and flourishing ($\beta = -0.31$, $p \leq 0.10$).

From these results, two statements about our hypotheses can be made. First, proactive feedback-seeking is not a good predictor of teachers' flourishing. Second, proactive feedback-seeking does moderately predict teaching performance. These results are not fully in line with what we had expected. Therefore, further inquiry must be made into why this might be the case. We did this by introducing a qualitative follow-up study.

21.4 Qualitative Follow-Up Study

The quantitative study reported above also showed unexpected findings regarding the role of proactive feedback-seeking. Therefore, it is interesting to delve further into the focal topic of proactive feedback-seeking as a method of promoting and enacting on professional agency. In order to investigate this main phenomenon further, we collected qualitative data by conducting interviews. Methodologically, this new research component builds on the quantitative study in a sequential fashion (Creswell 2009), in that the results of the quantitative section inform the data collection of the qualitative section. This research strategy is particularly helpful given the small size of the population under study (Newman et al. 2007). In this section, we investigate dynamics of proactive feedback-seeking by teaching staff in the workplace to reveal how often it is engaged in, how it is perceived, who it is used by, and to whom it is directed.

Table 21.2 Details of the interview respondents

Name	Gender	Role/position	Years of teaching experience	Years in position
Colleen	Female	Early years teacher	5	1
Donna	Female	Early years teacher	14	5
		Early years curriculum coord.		4
Mary	Female	Primary years teacher	15	1
Rowland	Male	Primary years teacher	20	3
Lauren	Female	Primary years teacher	12	2.5
		Primary years curriculum coord.		1.5
Melissa	Female	Early years teaching Assistant	5	5
Mildred	Female	Early years teacher	8	5
Jenny	Female	Principal	25	2

21.4.1 Method

The interviews were conducted in the English language with randomly selected survey respondents. As saturation was reached after eight interviews, we believe this sample of candidates captures the common thread of opinions of the teaching staff regarding the topic of proactive feedback-seeking in the workplace. Table 21.2 lists the details of the interview respondents. Note that we used pseudonyms for each staff member. The roles of staff members range from being a teacher or teaching assistant in the Early Years Department (children aged 2–5 years old) and the Primary Years Department (children aged 6–12), to being a curriculum coordinator (sometimes also referred to as team managers, heads of year, or heads of a subject in other schools), to being the principal.

During the interviews, a guide was used by the interviewer only to ease the respondent into the relevant discussion topic at hand. Questions like “do you take part in proactive feedback-seeking?”, “what is your motivation in proactively seeking feedback?”, and “do you personally have a memorable experience with proactive feedback?” were used to prompt respondents to reflect and elaborate on their own and colleagues’ proactive feedback-seeking practices. To avoid bias, it was not until the end of the interview that the quantitative results of the study were revealed to the respondent. Since the interviewees were already introduced and briefed about the topic during the quantitative study and given the focused nature of inquiry, most interviews lasted for only 20 min (Froehlich and Harwood 2016). Each interview was audio recorded and then transcribed. The transcripts were then read through multiple times when induction was used to derive several recurring themes. These themes represented the modes interviewees described as using whilst engaging in proactive feedback-seeking which were then coded and labelled to be presented in the qualitative results of this study.

21.4.2 Results

Five themes were mentioned by the participants: method, intention, willingness, directness, and the target of proactive feedback-seeking. The following report of results is structured according to these themes.

First, monitoring as a method of proactive feedback-seeking was revealed as a non-verbal way of seeking feedback often used by the teachers and teaching assistants. With the purpose of enhancing one's own insights, active listening and/or observation of others' work is carried out. This encourages the feedback-seeker to "make mental notes and comparisons between their and others' work" (Mildred). An ah-ha moment can be achieved in which one can increase the breadth of their knowledge and practice without verbal communication but, rather, amongst one's own thoughts. The second method that was mentioned by the respondents is direct inquiry. "This can be carried out through active communication or hands on instruction" (Mildred). Through "two-way visual and or auditory dialogue", the feedback-seeker can receive informative feedback regarding the topic at hand that "can be embraced in new practices" (Colleen).

Second, intention emerged as an important theme. One may proactively seek feedback to avoid "misunderstandings between stakeholders and/or reassert approval, preciseness, and appropriateness of one's thoughts or actions" (Mary). There are several factors of one's workplace environment which determine the extent that intentional feedback-seeking is carried out including "trustworthiness and respect amongst colleagues" (Rowland), "openness, the degree of decentralisation in the workplace" (Jenny), and "the goals of the workplace, financially, creatively, punctually, and/or output-motivated" (Mildred). More than this, instances of rather unintentional, subconscious feedback-seeking were mentioned. This could be a sign of a "lack confidence, inexperience, or inability to stand on ones two feet" (Mary) if approval is sought for simple and fundamental tasks.

A third dimension that emerged was the willingness to proactively seek feedback. Voluntary feedback-seeking refers to being "initiated by oneself by having an open mind to exploring alternatives" (Melissa) or "enhancing one's ideas with the ambition of professional growth" (Rowland). Involuntary feedback-seeking occurs when feedback-seeking is "initiated or encouraged by a superior in the form of mandatory discussion of peer reviews and observations as a result of the incapability of teachers to do so naturally" (Donna). Note that this may still contain some feature of proactivity. Donna continues on to suggest that this may be due to the "lack of trust amongst colleagues", "lack of confidence within one's self to seek feedback", and/or "differences in cultural or personality traits". Another reason may be that "one simply lacks the motivation to grow in their profession" (Mildred).

Fourth, proactive feedback may not be sought directly from the target. Direct feedback-seeking entails dialogue being carried out with comfort and confidence. "Inquiries or requests are posed to the most appropriate stakeholder" (Donna) and are structured and to the point with the goal of answering "well-thought about issues or ideas worthy of fixing or improvement" (Melissa). Indirect feedback-seeking

refers to conversation being carried out with hints of “discomfort and a lack of confidence” (Mildred). Questions and/or requests posed to various stakeholders are unstructured and dodge the main point or purpose of inquiry. This may occur when the feedback-seeker is “unsure of what kind of response they will receive” and/or “are (sub)consciously looking for some sort of confirmation without receiving straight forward condemnation or disapproval” (Donna).

The fifth theme that arose focused on the target of proactive feedback-seeking. Various scenarios were stressed by the teachers and teaching assistants. Proactive feedback-seeking of teachers from their teaching assistants was a central theme throughout the interviews. Working together as a team in one classroom, this line of contact is often used for both familiarity and proximity reasons. Because both educators are exposed to the same classroom experience, knowledge about current happenings is shared. Mildred, the teacher, notes that by reaching out to her teaching assistant for feedback, dialogue can be easily accessed to “bounce particularly familiar ideas off of”. Proactive feedback may be sought to reveal a potentially different approach about a particular situation. For instance, Colleen explains that it may be appropriate for an Early Years teacher to want to consult her teaching assistant that is more motherly to help console a distressed child. Furthermore, teachers mentioned that a likely target to proactively seek feedback from is other teachers with similar expertise. “When uncertain about an outcome, a teacher can pursue checking with someone of similar educational background” (Jenny). Together they can brainstorm and exchange ideas on a casual basis when a colleague “hits a wall, is stumped, or is unsure about how to take a concept to the next level” (Mildred). Mildred continues on to note that “this doesn’t mean that what is said is necessarily taken on but allows for a foundation on what can be worked on”. Relatedly, teachers suggested that other teachers with dissimilar expertise can be a valuable source of feedback. This channel of dialogue often takes place when a teacher is in pursuit of “discovering different talents” (Jenny). Colleen explains that proactive feedback is sought by educators working in areas of expertise that they lack experience in. Several teachers, including Colleen and Rowland, have claimed to address other educators like Renee, an Early Years teacher with a background in Special Education, in attempt to seek tips and appropriate advice for a child with special needs. Curriculum Coordinators, too, were identified as targets of proactive feedback-seeking. Teachers like Colleen and Mary have noted that the reason why they would proactively seek feedback from a curriculum coordinator is mostly due to their expertise of the program. “As the teachers’ first point of contact before the principal”, “curriculum coordinators are there when teachers feel insecure about a situation” (Donna). Discussion can play out to include “day-to-day classroom issues or even situations that have been reoccurring for a while that compromise the safety and/or well-being of a child” (Mildred). Also the principal of the school was stated to be an important source of feedback. As the “most experienced member of staff” (Colleen) in the school setting, the principal is sought feedback from as a means to “obtain a complete perspective of events that are happening in the field of education and in the workplace” (Lauren). Teachers describe various reasons to proactively seek feedback from the principal as seeking advice “before potentially confrontational

discussions with other members of staff or parents” (Donna), “dealing with important and confidential issues” (Mary), and “for encouragement and insight into new opportunities” (Rowland). Proactive feedback is often sought from the parents of the pupils. There are two main reasons why teachers may seek feedback from parents. Teachers ought to “consult parents regarding their thoughts and experiences of having their child attend the school” (Lauren). As both parties constantly “work side-by-side for the best interest of the child”, teachers can seek feedback from parents to learn of any “medical, mental, or emotional health needs” and accept “recommendations regarding behaviour” (Mildred). Also, the pupils themselves were mentioned as a target for feedback-seeking by teachers and teaching assistants. A teacher may want to seek proactive feedback from a child as a way of “founding confidence within the child-teacher relationship” (Mildred). Given that the child is able and willing to give feedback to their teacher, doing so can help affirm that messages or concerns of a party were received by the other. Mildred believes that this “dialogue is an essential component in communicating when and if there is a problem”. Last, sources external to the school context were mentioned, as “teachers are able to obtain a professional and specialised opinion about a situation in which they are able to compare their own observations with those of the external educational source” (Jenny). An external educational source can include university professors, researchers, statisticians, and/or outside services and support such as a paediatrician.

21.5 Discussion and Implications

We hypothesised that learning in the workplace through social interaction supports the development of emotional, social, and psychological well-being. The quantitative strand of research has revealed that agentic, proactive feedback-seeking may not be as important of a tool as we may expect that teaching staff use to learn and then flourish in the workplace; the hypothesis was not supported by our data. These results are, however, not the first to suggest that feedback-seeking may have ambiguous effects (Anseel et al. 2013). One explanation for this may be found in the varied, multidimensional conception of proactive feedback-seeking that the respondents have offered in the qualitative follow-up study. It seems reasonable to assume that different methods or intentions of feedback-seeking (cf. Ashford 1986) or targets of feedback-seeking in very different roles (Froehlich et al. 2014, 2017) will produce different outcomes.

However, it is possible that this finding is circumstantial given the geographical location of this study and the international composition of the staff that work at the investigated school. To delve further into this prospect, the demographics of the study participants were looked at. It was noticed that more than half of the staff members who participated in this study identify with Indonesian culture and traditions. We then investigated the post hoc hypothesis that there is a difference in the level of proactive feedback-seeking and flourishing between the local and

international staff. Analysis of variance revealed that there is indeed a significant difference in flourishing between local and international teachers and teaching assistance. Specifically, non-Indonesians score higher on the Flourishing Scale than do their counterparts. This could help to explain the apparent lack of a relationship between proactive feedback-seeking and flourishing. It could be that the non-Indonesian staff members live by alternate definitions and criteria of what the concept of flourishing and well-being pertains to. One reason why Indonesian staff seem to flourish at a lower level than the international staff may revolve around the fact that almost all of the local staff members work at the school as teaching assistants. It could be that the staff fulfilling this position hold and sense a relatively lower potential to flourish in the workplace. Another reason why this may be the case is simply due to a difference in characteristics between local and non-local staff brought about by cultural dimensions. For instance, Hofstede and colleagues (Hofstede 2001; Hofstede et al. 2010) demonstrate that where Indonesia scores high on power distance and masculinity, Western countries typically score lower. Similarly, where Indonesia scores low on individualism and indulgence, Western countries score relatively higher. Noting that Indonesia is a relatively more masculine, indulgent, and collectivist society with centralised power, this could partially explain why Indonesian staff members at this school flourish at a lower level than others. To test this argument, further research could make use of a larger sample that allows the testing of hypotheses for individual cultural groups.

Also, there could exist issues regarding the dynamics of the relationship between the two variables: proactive feedback-seeking and flourishing. Dynamic aspects of proactive behaviours were also identified in other research (Grant and Ashford 2008). It could be that the level of proactive feedback-seeking is a poor indicator of flourishing in which fitting proxies of proactive feedback-seeking could be used to better predict the relationship. During the interviews, it was noticeable that it was not necessarily the case that the higher tenure of a staff member led to a difference in flourishing to that of a lower-tenured staff member. For instance, consider a staff member who is a newcomer to the school. As an apprentice, it is the teacher or teaching assistant's best interest to take part in as much proactive feedback-seeking behaviour as possible. At the same time, however, they do not flourish at the same level as their colleague with, for example, four or more years of teaching under their belt. Even though a colleague with several more years' experience may proactively seek feedback at a lower level than the newcomer, the seasoned worker can still flourish for other, potentially job satisfaction and comfort-related reasons. The opposite can be hypothesised about a very seasoned worker. With a long history of work experience comes confidence from routine practice. This can ultimately diminish the frequency and need for proactive feedback-seeking by the individual, all the while flourishing in the workplace. Therefore, the temporal dimension of proactive feedback-seeking (Froehlich et al. 2015c) – amongst other contextual elements – could profoundly impact the relationship it has with flourishing at work. This is aligned with the view taken by Van Waes et al. (2015), who contrasted the networks of teachers at various levels of expertise and experience. As suggested by our qualitative results and the findings of Van Waes and colleagues (Van Waes et al.

2015, 2016), there are indeed differences in feedback-seeking dependent on the stage of development in terms of size and diversity of the network.

We hypothesised that agentic, proactive feedback-seeking improves subjective teaching performance. Quantitative methods have revealed that this hypothesis is supported in this case study. Qualitative data collected through the interviews allow for discussion regarding potential explanations to why and under what conditions this relationship holds. The interviews suggest that proactive feedback-seeking is highly governed by the extent of the staff's willingness and intention in engaging in this behaviour. To signal sincere willingness and trustworthy intentions, curriculum coordinators, teachers, and teaching assistants must show openness and transparency to their colleagues by having their office door, both literally and figuratively, open (Detert and Burris 2007). In the case of perceived hostility, disrespect, or mistrust in the environment (Borgatti and Cross 2003), an open-door policy can improve the quality of communication amongst staff. By practicing this policy, teaching staff can feel free and safe to proactively engage in direct feedback-seeking in both forms, monitoring and verbal inquiry. Teachers and teaching assistants would also be able to seek proactive feedback more effectively from their curriculum coordinator as routine reviews and evaluations would become more personalised with regard to personality, cultural, and/or habitual traits that may have prevented staff from proactively seeking feedback as much as is desired and/or required. Teachers and teaching assistants would then be able to feel more comfortable about bringing forth questions and concerns about their job performance and have confidence that the curriculum coordinator is open to giving them honest and proactive feedback. As a means of enhancing teaching performance, proactive feedback-seeking should be encouraged by management and engaged in by staff. Curriculum coordinators – as the first and main point of contact for teachers and teaching assistants – should supervise and initiate proactive feedback-seeking activities.

The working environment and attitudes of personnel matter in consideration of the method, intention, willingness, directness, and target of proactive feedback-seeking being undertaken in the workplace. Based on the qualitative data gathered in the interviews, there exist several circumstances that govern whether proactive feedback-seeking is carried out. Firstly, one must feel comfortable seeking feedback. Having an open-door policy can help lure feedback-seekers. Second, one must respect the person giving the feedback. The interviews revealed that respect may be derived from the educational status of the feedback-giver or even envied performance level that has been observed. Feedback given must be appropriate and applicable to the situation so that the feedback-seeker can utilise the new information and potential recommendations. Third, one must be honest in their feedback. Discussions in the interviews reveal that if a teacher or teaching assistant does not have confidence that discussions will be kept confidential and carried out with their best interest at heart, proactive feedback-seeking behaviour may be discouraged. Last, feedback must be kept professional. As studied by Wiliam and Leahy (2015) and highlighted throughout the interviews, professional trust pertains to keeping promises, honouring commitments, and admitting when a mistake has been made. With this said, it becomes clear that in a working culture that possesses these five

characteristics, proactive feedback-seeking behaviour can be more easily encouraged and carried out.

Although not part of our core interest when implementing the study, we did find that the educational background of respondents did play a role for their engagement with proactive feedback-seeking activities. Specifically, the higher the educational status of the staff member, the less they engaged in proactive feedback-seeking. This relationship can partly be explained by the psychological costs involved with proactive feedback-seeking (Ashford 1986). For instance, a teacher with a doctoral degree in the subject taught may be more reluctant to seek subject matter-related feedback from others, as he or she may feel like they are the most experienced and educated in the field. Conversely, teachers or teaching assistants that have received less formal training in a certain subject may be less preoccupied about asking others for feedback.

21.6 Limitations and Future Research

The limitations of this study revolve around potential arguments of validity that could be posed due to the context in which the data was collected and the variables that were chosen. The size of the sample is considered as a potential reason why culture was not elaborated on throughout this study. It was hypothesised that because of variations in cultural dimensions, culture could act as a moderator between the relationship of proactive feedback-seeking and job performance. Potentially due to the relatively small sample size, no relationship was found, and, because of this, it was decided that the main discussion of this study would focus on the parsimonious model. With a larger sample size of diverse cultures, it could be interesting to delve further into the prospect of culture influencing the speed, magnitude, and channels used in seeking feedback proactively in an international setting. Similarly, further research could lead to context-determined results that may be different to those found in this study. It is encouraged that future studies emphasise diversity in personnel characteristics, culture and traditions, professional objectives, and language of instruction. All of these factors may greatly influence proactive feedback-seeking behaviours in the workplace.

Generalisability of the results is an issue. It must be reminded that the scope of this study looks at a relatively small international primary school set in a suburb of Jakarta, Indonesia. The size, location, and composition of the school population have a great influence on the degree of flexibility, and creativity staff is granted in terms of goal creation and implementation. For instance, an international high school located in the capital of Canada may be governed by a provincial board of education which could possibly limit the degree of flexibility staff have in job innovation and enhancement of objectives and policies. Therefore, the extent to which proactive feedback-seeking behaviour positively affects performance amongst teaching staff in the workplace can depend on the circumstances governing the educational setting.

Furthermore, this study looked at the relationship between proactive feedback-seeking, teaching performance, and flourishing. If further research is to be carried out, it is possible that other, indirect measures of performance can be used in relation to proactive feedback-seeking behaviours such as absentee rates and student performance (Timperley and Alton-Lee 2008). The spotlight can also be put on variables that induce a proactive feedback-seeking environment. For instance, future research could zoom further into factors such as personality dimensions, trust levels via turnover rates, perceived working environment conditions, and closeness of relationships. Last, potential topics of future research have been derived throughout the making of this study. These include looking into the speed at which feedback is relayed and the longitudinal feedback-seeking trend observed over one's professional career.

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Chapter 22

Reflections on Empirical and Methodological Accounts of Agency at Work

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22.1 Agency at Work: Towards Contextualising a Theoretical Notion

Assuming responsibilities with regard to deliberate engagement, practices of self-conduct and exploration of knowledge have become elements of emerging definitions of professionalism (Nerland and Damşa [Forthcoming](#)). In this context, professionals are often viewed as being accountable for the quality of work and services they provide and, in many fields, as being responsible for ensuring that professional actions are based on relevant and updated knowledge. This implies engagement through which they learn and develop, update or revise their work-related levels of knowledge and competence (Froehlich et al. [2015a](#); Froehlich et al. [2014a](#); Gegenfurtner [2013](#); Gegenfurtner et al. [2016](#)). From Simons and Ruijters's (2014) perspective, “the question is no longer who is a professional, but who chooses to be a professional. And by implication, if you choose to be a professional—how do you shape your professional development in order to remain a professional” (p. 981). This implies a focus on how individuals (as part of collectives) engage with work and learning in a way that enables them to continuously develop. This focus, in turn, raises empirical questions about what drives this (self)-development process and the sustained engagement necessary to keep this process ongoing.

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In this context, agency is a crucial ingredient as it is considered the driving force behind ones' actions in this direction (Damşa et al. 2010; Markauskaite and Goodyear 2016). More advanced understandings of agency can prove instrumental in examining and providing interpretative accounts of (aspects of) professional learning and development in various contexts. Hence, understanding what agency is about and how it can be defined, examined and enhanced becomes of seminal importance. Empirical examinations such as the ones proposed in this volume have the potential to generate enhanced operationalisations of agency at work and ways to employ these in further examinations and interventions in the world of work. Until recently, work on agency has been advancing understanding and elaboration mostly within the conceptual realm. Empirical and methodological work having agency as a central construct has intensified in the past decade and aimed at generating empirical accounts thereof and at devising appropriate approaches in various contexts, for example, school, work and professional development. Nevertheless, despite these developments, empirical accounts of agency are still in search of clear and unifying accounts and methodological approaches that lead to a better understanding of the construct. Given the variety of contexts wherein agency can manifest itself, the various aspects that are associated with its expression and the wide range of theoretical perspectives used to conceptualise the notion (Biesta and Tedder 2006; Damşa 2014; Goller and Paloniemi 2017, this volume), it is no surprise that empirical studies have also taken a variety of paths in examining it.

To specify the nature of agency in relation to the plenitude of emerging accounts, established perspectives on learning as changing participation in various practices and as developing knowledge and competence have, in recent years, been extended with concepts and analytical lenses from philosophy and the social studies of science. Outlooks of agency in *philosophical* works (Biesta and Tedder 2006) indicate that agency has often been depicted (although not always explicitly) in terms of an antagonistic relationship between a non-rational, normative action (Kantian ideas) and a rational, instrumental or utilitarian action (American pragmatism and Continental phenomenology). Agency that emerges from the former reflects a moral will in which actors (individual or collective) pursue free, moral action. On the opposite end, an individualistic conception pictures agency as rational but instrumental action. This is focused on agency serving a utilitarian purpose, the means to achieve an interest or a material necessity. So, on one end, we have a focus on a self-legislating morality that can lead to good deeds, and on the other end, a focus on purposeful thinking and action that serves the achievement of (individual) goals. Within *sociology*, a vast discussion unfolded (with action, structure and habitus as flagship notions) with regard to whether agency is possible and the conditions in which it emerges or can be captured. Discussions in this field commonly opposed agency to social structure and defined it as “the ability of actors to operate independently of the constraints of social structure” (Biesta and Tedder 2006, p. 6). Some accounts have attempted to overcome this structure/agency dualism, with structure being seen as a product of patterns of action emerging from human activity but being constrained by rules (Giddens 1991) and habitual action as originating in the

past but then becoming structure and shaping new, future activity and things in the world (Bourdieu 1990).

A more recent conceptualisation within social theory argues for the necessity of maintaining distance from both strict individualistic stances that focus on the ego as the main driver of decision-making and of the way to achieve an individual interest and holistic stances that emphasise the prevalence of structure and routinised action as following from the already established order (Emirbayer and Mische 1998). In this conceptualisation, the focus is on the dynamic interplay between interest, routine, judgment and action. An analytic distinction is possible between three dimensions of agency based on Emirbayer and Mische's stance (see Damşa et al. 2010; Damşa 2014; Rajala and Kumpulainen 2017). An *iterational* dimension is manifested in the participants' ability to recall, select and apply taken-for-granted schemas of action developed through past activities; the agentic aspects lie in how people capitalise on the existing body of knowledge and practices. A *projective* dimension indicates how agency implies orientation toward the future, with people not merely repeating past routines but challenging, reconsidering and reformulating their ideas, projects and plans. By distancing themselves from the established ways of action, they are enabled to transform thoughts and actions and generate alternative responses to problems. Finally, a *practical–evaluative* dimension responds to the demands and contingencies of the present and it involves momentary judgment of, deliberation about and decision-making in means and ends of action. From the perspective of this conceptualisation, agency can only be captured in its full complexity if it is situated within the flow of time and takes into account relational and structural aspects toward which participants can assume different orientations. Such orientations can involve relating to the structure and the others, to some extent maintaining the status-quo or changing their relationship to each other and to the context/structure and by that, constantly adjusting and transforming these and the relationship.

In this chapter, we reflect on the way the studies presented in Part II of this volume have examined agency at work by using different methodological approaches in varying empirical contexts. We attempt to provide some descriptive and reflective accounts of the variety and nature of the empirical work and the methodologies employed by using the conceptual dimensions and perspectives discussed above. In order to understand how the studies have engaged with the construct of agency at work at the empirical and methodological levels, we review their foci and way the construct has been operationalised, how the units of analysis have been framed, how data has been collected and analysed and how the empirical contribution has been charted in relation to existing conceptualisations and findings. Our ultimate aim is to identify and reflect upon how the empirical and methodological work in these studies has contributed to advancing understanding of agency in professional learning and development. Grounded on this reflective account, we discuss possible avenues for depicting agency at work and further research on the topic.

22.2 Studying Agency at Work: An Account of Methodologies

The studies presented in Part II of this volume have employed various approaches in examining agency, which have covered a wide methodological range. Qualitative, quantitative and mixed-method approaches (Hesse-Biber and Johnson 2015) have been used, with variation in the methods of data collection and analysis and distinctions in how the units of analysis were accounted for. The majority of the chapters relied on qualitative methods exclusively, two chapters used only quantitative methods, while two more chapters drew their conclusions based on using mixed-methods approaches in a broad sense. Below, we provide a descriptive account of the focus of these studies and operationalisations of agency, the level and unit of analysis, data corpus and sample and analytical approaches.

22.2.1 *Foci of the Studies and Operationalisations of Agency*

The individual contributions display a plethora of conceptualisations of agency at work and, consequently, varying operationalisations. A more detailed analysis of each chapter's focus is useful because differences in what the studies have focused on and which operationalisations they have used tend to indicate and reconstruct the nomological network of the notion. Specifically, the individual contributions can be clustered in two sets that are based on orientations emergent in the definitions and operationalisations of the notion: (a) one set of chapters that focuses on the relational nature of agency at work as a bridge between individual and contextual affordances and (b) one set that focuses on the transformative nature of agency at work as a motor for innovation and change. Both sets are discussed in turn. Table 22.1 presents an overview of how each individual contribution has operationalised agency and engaged in its empirical examination.

A first set of studies emphasises relational aspects of agency at work. The term “relational” is used here as an analytical tool to emphasise the relations and reflexive contingencies between (a) individual, person-specific affordances and (b) contextual affordances of the environment that these studies focus on. This is in line with Emirbayer and Mische's (1998) non-dualistic and relational perspective, where interplay between these aspects is an essential feature. In this sense, agency at work tends to be conceptualised as a bridge over the individual-contextual divide. For example, Kreuzer et al. (2017) frame and measure intrapreneurship competence as a manifestation of work agency that orchestrates situational affordances, personal dispositions and situation-specific skills at work. Similarly, for Vähäsantanen et al. (2017) and Billett and Noble (2017), professional agency rests in the relational contingencies of individual and collective work practices. Ylén (2017) addresses agency as a relational phenomenon with a study that focuses on what kind of professional

Table 22.1 Overview of definitions, operationalisations and units of analysis

Definition of Agency	Unit of Analysis	Chapters
<i>The Relational Nature of Agency at Work</i>		
Professional agency: influencing, making choices, expressing ideas and suggestions, and taking stances regarding work-related matters, such as individual and collective work practices	Learning activities and outcomes	Vähäsantanen et al.
Agentic action	Agentic action	Palesy and Billett
Work agency and intrapreneurship: competence that takes into account situational affordances and contexts, dispositions and situation specific skills	Individuals’ ability	Kreuzer et al.
Use of the concept “co-working and learning”	Co-working and learning arrangements	Billett and Noble
Agency always requires the power to make choices and to make something happen and within the practices one either has or does not have this power	Possibly project-level work	Ylén
<i>The Transformative Nature of Agency at Work</i>		
Self-directedness in work-related learning processes: steering and taking responsibility in assessing learning needs, settings goals and strategies and evaluating the learning process	Individuals’ self-directedness in work-related learning processes	Raemdonck et al.
Transformative agency is the ability of individuals and groups to transform the organisation of their work and practices in changing circumstances	Forms of interaction in evolution of transformative practices	Kerosuo
Teachers’ capacity to critically evaluate and reconstruct the conditions of their own and professional identities	Agentic orientations	Rajala and Kumpulainen
Relational agency: an enhanced form of agency where the resources of more than one practice are brought into play rapidly to work on a complex problem Transformative agency: actions criticising the current activity; highlights the need for change and envisions new patterns of activity	Capitalising on resources Reflection on own practices	Edwards et al.
Agentic/proactive feedback seeking: a self-initiated and future-focused attempt to gain evaluative information about oneself or about one’s work	Individuals’ feedback seeking from others	Harwood and Froehlich
Professional agency: subjects’ creative initiatives for developing existing work practices	Creative acts of individuals	Collin et al.

virtues do “agency-enabling practices” support within an organisation. Palesy and Billett (2017, this volume) define agency as being shaped by previous individual experiences and sociocultural influences at work. In summary, this first set of studies highlights the relational nature of professional agency as a bridge between individual and contextual affordances, much in line with Emirbayer and Mische’s

(1998) iterational dimension of agency described above. This is largely because the studies focus on how actors situate—and capitalise on—their knowledge and practices adaptively in context-sensitive manners.

Another set of studies tends to centre on how actors change existing routines, how they invent novel or alternative approaches and, more generally, are oriented toward the future of their work; in this sense, agency at work is operationalised as a driver for innovation and change. This corresponds to the transformational nature of agency at work. For example, Rajala and Kumpulainen (2017) examine agentic orientations in teachers and define professional agency as the capacity to critically evaluate and reconstruct the conditions of their professional identity within educational change efforts in their schools. A similar approach on the work environment is articulated by Kerosuo (2017), who defines transformative agency as the ability of individuals and groups to transform the organisation of their work and practices. A particular focus is on changing circumstances. Collin et al. (2017) also address change in work when they define agency as participants' creative initiatives for developing and reinventing existing work practices. Edwards et al. (2017) define transformative agency as actions that criticise the current activity and highlight the need for change by envisioning new patterns of activity. Harwood and Froehlich (2017) use the concept of agentic/proactive feedback seeking, which is defined as a self-initiated and future-oriented attempt at gaining evaluative information about oneself or one's work. This approach is similar to Raemdonck et al. (2017), who focus on self-directedness and include taking responsibility in assessing learning needs, setting goals and strategies, and evaluating the learning process for future-oriented improvements. In summary, this second set of studies emphasises transformative actions. Such actions align with orientations towards the future, as depicted by the projective dimension in Emirbayer and Mische's (1998) orientation, which is usually associated with change and innovation.

22.2.2 *Level and Unit of Analysis*

The levels of analysis in the different studies vary and are placed either at the individual or at the collective level, which has consequences for determining the analytical focus. A total of four studies focus on the individual level (Rajala and Kumpulainen 2017; Edwards et al. 2017; Kreuzer et al. 2017, Raemdonck et al. 2017), two more on the collective level (Kerosuo 2017; Ylén 2017), and five on both the individual and collective levels (Billett and Noble 2017; Collin et al. 2017; Harwood and Froehlich 2017; Palesy and Billett 2017; Vähäsantanen et al. 2017).

An interesting insight is provided by the unit of analysis identified in the studies. The unit of analysis describes the object about which interpretations/generalisations are made (Säljö 2009; Yurdusev 1993) and which is determined by the researcher's interest in exploring or explaining a specific phenomenon. In this case, it reflects the way in which agency at work is operationalised and interpreted in the different studies. Connected to the focus and varying definitions of agency in the studies, the

eleven studies delineate slightly different units of analysis; in other words, each unit of analysis identified is unique. We observe a clustering of the way the unit of analysis is framed (see Table 22.1): One set of studies chose individual expressions as reflecting the essence of agency, enacted in orientations, actions/acts, abilities towards more creative conducts or directedness and feedback seeking in relation to one's own (individual) performance. Another set is represented by those seeking understanding by analysing collective expressions as enactment of agency, in which interaction plays an important role. Reflecting on ones' practice and capitalising on human and knowledge resources are seen as an expression of agency in combination with a creative attitude and conduct by one study and the ability to make decisions appropriate to context affordances by another study.

22.2.3 Data Corpus and Sample

Qualitative interviews have been used in the majority of studies in order to gather data. Specifically, eight of the eleven studies base their findings at least partially on interview data. Other forms of data collection include open-ended questions (Collin et al. 2017; Vähäsantanen et al. 2017), observations (Edwards et al. 2017), ethnographic methods (Kerosuo 2017; Ylén 2017), secondary data (Kreuzer et al. 2017) and surveys (Harwood and Froehlich 2017; Raemdonck et al. 2017).

There is some diversity in the participants in each study. In terms of geographical region, five studies recruited their samples in Finland, two in Australia, and one each in Belgium, Chile, Germany and Indonesia. With regard to professional domain, four studies drew samples from the field of education, two from IT, two from health- and homecare. The remaining two studies used inter-sectoral samples focusing on apprenticeship education (Kreuzer et al. 2017) and lower-skill education (Raemdonck et al. 2017).

22.2.4 Analytical Approaches

Several of the examined studies employ qualitative methods of data analysis. Collin et al.'s (2017) study employs qualitative data-driven thematic analysis (Braun and Clarke 2006), identifying themes related to creativity emerging from and open-questionnaire data and qualifying these by using a theoretical framework. Such an approach is also employed by Kerosuo's (2017) study, which uses discourse analysis with a focus on speech turns and identification of transitional episodes together with using Engeström's (2016) types of agency in order to interpret actions in transitional episodes. Rajala and Kumpulainen (2017) use qualitative content analysis (Krippendorff 2012; Schreier 2012) in which data was approached and analysed using a framework based on sociocultural notions and the analytic dimensions of agency by Emirbayer and Mische (1998). Three other studies employ inductive

reasoning processes (Edwards et al. 2017; Palesy and Billett 2017; Ylén 2017) as a strategy for distilling, in subsequent phases, the essence and features of agency within the given context. These studies engage, to a certain extent, in an abductive analytic approach (Tavory and Timmermans 2014). They start by letting their data “speak” and by exploring ideas and themes that are present in the qualitative data (i.e., interviews, documents, observations and ethnographic notes) in a grounded theory fashion (Glaser and Strauss 2009). However, they constantly connect the emerging interpretations with the literature, which enriches and extends their interpretations. In this way, these studies generate both the “best possible explanation” for the examined phenomenon but also new ideas relevant both to the conceptualisation of agency employed in the respective studies and to the types of practices examined empirically.

Two studies use exclusively statistical methods. Kreuzer et al. (2017) draw from item-response theory (Boone et al. 2014) when analysing their data. Within this framework, both the learners’ abilities and the items’ difficulty is taken into account to align the data to a new scale. This scaled data is then used to test the hypotheses of the study using analysis of variance (including post hoc testing for group differences) for purposes of scale validation. The chapter of Raemdonck et al. (2017) features the development of a scale to measure self-directed learning. In multiple samples, they apply exploratory and confirmatory factor analysis. Later, an analysis for robustness is made (e.g., in terms of measurement invariance). In summary, the recommended process for scale development and scale validation was followed (DeVellis 2003).

Two further studies apply mixed-method approaches. Harwood and Froehlich (2017) use a sequential mixed-method design (Creswell 2009), where a strand of quantitative data collection and analysis results in an unexpected finding and is thus followed up with an analysis of qualitative interviews (see “follow-up study design”; Schoonenboom and Froehlich 2016). Specifically, partial least squares structural equation modelling (PLS-SEM; Hair et al. 2014) is used to analyse the research model quantitatively. In order to understand the results more deeply, short interviews were conducted and analysed using qualitative content analysis (Krippendorff 2012; Schreier 2012). Vähäsantanen et al. (2017) have collected only qualitative data for their study. However, these data have been analysed using both qualitative and quantitative content analysis concurrently (Hsieh and Shannon 2005) and are further examined in a follow-up study. Specifically, they assign codes to their corpus on material about the learning activities and learning outcomes of work conferences. After putting the codes into larger categories, the authors present both qualitative interpretations and frequency counts of categories next to each other to answer their research question.

22.3 The Locus and Nature of Agency at Work: Linking Conceptual and Empirical Accounts

The empirical studies examine and reveal different expressions and instantiations of agency at work. The findings, therefore, contribute to further clarify the notion. We observe that studies qualified as addressing relational aspects of agency involve, in general, aspects that situate them within Emirbayer and Mische's (1998) iterational dimensions of agency. This denotes an orientation towards identifying agency wherein the participants engage with schemas of action developed through past activities but also capitalise on the existing body of knowledge and practices. An illustrative example is Billet and Noble's (2017) study, which focuses on how co-working can support the development of occupational capacities and concludes that the existing knowledge of the experts can support the development of work practices of novices by mediating the interpersonal discourse and intrapersonal intentionality while at work. Vähäsantanen et al. (2017) find that work conferences, where exchange of ideas and opinions takes place, are suitable interventions to promote dialogical agency in the context of work-related learning and, hence, existing knowledge and practices are disseminated in a broader community. Ylén's (2017) ethnographic study of organisational practices in software development approaches agency from a situated perspective and identifies four existing practices that enable agency: the practices of democracy, experimenting together, self-directed development, and independent project teams. In addition, we observe that features of the practical-evaluative dimension are represented in some of the studies where the relational nature is emphasised. Such practical-evaluative features involve judgments and decision-making about means and ends of action. Practically, this translates into an orientation of agentic conduct towards pragmatic actions that can lead to concrete, envisioned/desired outcomes. While all the studies identify, to various degrees and extents, elements typical to this dimension in interplay with the iterational one, Palesy and Billett (2017) identify design aspects, such as building on personal circumstances, emphasising the personal benefits of transfer and seeking opportunities to engage with peers that enhance professional training and make agentic conduct possible. They suggest that the targeted aspects be combined with personal capacities, previous experiences (e.g., work, life and educational), life histories and ongoing negotiations in order to maximise (the motivation for) training and transfer (Quesada-Pallarès and Gegenfurtner 2015). Finally, Kreuzer et al. (2017) address intrapreneurship competence between learners with different school biographies and identified apprenticeships as an instrument for boosting intrapreneurship competence for learners with an intermediate level of education. Here, existing knowledge and practice are being opened up to novices through apprenticeship, in that way facilitating their engagement in actions that can lead to achieving an appropriate level of training and obtaining their degree.

Within the set of studies that view agency from a transformative perspective, we predominantly observe features of the projective dimensions, which implies orientation toward the future, not simple repetition of past routines but reconsideration

and reformulation of ideas or practices; such features are here intertwined most often with iterational aspects. Edwards et al.'s (2017) findings indicate that innovation work in schools can be achieved through agentic actions that enable individuals to meet set goals. In their view, exerting agency is always related to the affordances of the environment, since a strong sense of agency is necessary (but not sufficient) to enact/perform relational work; therefore, recognising and working with the motives of potential collaborators that can shape future work are essential. Collin et al.'s (2017) study of the relationship between agency and creativity shows that these are to be viewed in a situation- and context-bound perspective. Environment-dependent aspects are here intertwined with the conception of creativity and the way this is envisioned to shape action in future work. Kerosuo's (2017) study examined explicitly how transformative agency emerges in the development of knot-working and identified a set of transformative actions that aim at improving and enhancing actions in the future, such as criticism of the prevailing practices, explicating and envisioning the new possibilities, decisions about consequential actions etc. Harwood and Froehlich (2017) found positive relationships between teachers' proactive feedback seeking and a clear action oriented towards improving future work. In their study, this projective nature is intertwined with a practical-evaluative one, in that the study showed a relationship between this orientation and the teaching performance of the participants. Raemdonck et al.'s (2017) study of self-directed learning made connections to agency in terms of how the former represents a departure point for further work. Interestingly, Rajala and Kumpulainen's (2017) study employs Emirbayer and Mische's (1998) dimensions to depict the nature of agency in teachers' change efforts in the classroom and clearly illustrates the way expressions of agency aligned with these dimensions are intertwined. The study identified four orientations: (a) a practical-evaluative orientation emphasising the contextualisation of the educational change in the practical realities of the teachers' work, (b) a reproductive orientation emphasising how existing practices could be transferred to changing contexts, (c) the critical-projective emphasising critique as an ingredient of dialoguing current school practices and (d) the creative-projective orientation emphasising teachers' future orientation and transformative agency within the schools' educational change efforts.

This synthesis along the lines of Emirbayer and Mische's (1998) dimensions emphasises not only the expression of various aspects of agency in work settings. It also indicates that they usually are intertwined. From this perspective, when considering the lenses provided by other conceptualisations, more layers can be added to the interpretations. For example, the way agency's exertion is depicted at the empirical level reflects a strong emphasis on its utilitarian nature related mainly to how undertaken action can lead to particular achievements in relation to work, learning and development. All of the studies in Part II of this volume identify and elaborate on such an orientation. Teaching, apprenticeship, feedback and other forms that have training potential are identified as instruments that can serve this purpose. Generally, such pragmatic orientations can be related, on the one hand, to the quality of performed work or, on the other, as a response to particular expectations of the professional domain/community. An interesting question is whether, both at

individual and collective levels, the self-legislating morality leading to good acts (Biesta and Tedder 2006; Damşa 2014), such as pursuing (self)-development because it can lead to innovative and creative behaviour and work, should be distinguished from the more pragmatic approach. Some of Ylén's (2017) identified dimensions of practice of democracy in the software developers' work point towards moral aspects. Maybe more explicit in this respect are the teachers' innovative actions in classroom learning in Rajala and Kumpulainen's (2017) study, where teachers engage in some form of agentic conduct in order to achieve concrete results with regard to student learning, but driven by a moral and normative positioning that implies that learning is something positive. Similar interpretations can be distilled in Edwards et al.'s (2017) study, where the assumption that innovative behaviour in schools is beneficial both at the individual and collective levels. This is also true in several of the other studies (e.g., Billet and Noble 2017; Collin et al. 2017; Harwood and Froehlich 2017; Kerosuo 2017), where the implicit position is that education and training are good in that they contribute to the development of both people and practices. Finally, from a sociological perspective, many of the identified expressions of agency are to some extent aligned with the patterned, existing elements of the structure. Learning and training as formal activities are depicted in most of the studies as happening within the existing realities of work/education settings and often dependent on social and institutional structures (Gegenfurtner et al. 2010; Knogler et al. 2015). Not surprisingly, individual participants are portrayed in the empirical examinations as approaching such structural contexts (Giddens 1991) with their own agenda and exerting agency that can propel them towards development and novel conduct. They act within the patterned, habitual action spectrum they operate in but go beyond routinised practices and, often implicitly, work towards generating and shaping new, future activities or things (see Bourdieu 1990).

22.4 Heterogeneity: Quintessential Trademark of Research on Agency

Generally, we observed a distinctive level of heterogeneity among the studies in Part II of this volume in several respects: the conceptualisations and definitions, the operationalisations, the foci of the studies and the levels and units of analysis. To start with, heterogeneity is evident in the conceptualisations and definitions of agency. This is, of course, in line with the book's overall objective of taking a rather wide perspective when discussing the notion (see Goller and Paloniemi 2017). For this reason, contributions contain other "standalone" concepts that are often not discussed in relation to agency, such as *self-directed learning* (Raemdonck et al. 2017) or *proactive feedback-seeking* (Harwood and Froehlich 2017). Furthermore, we observed heterogeneity in the operationalisation of agency. The multitude of definitions used also lead to a wealth of different sub-concepts of agency. These sub-concepts include, for example, *professional agency* (Collin et al. 2017), *teacher agency* (Harwood and Froehlich 2017) and *transformative agency* (Kerosuo 2017).

Associated with that, different ways of operationalising these variants of the main agency concept were used. On the one hand, this depicts the wide field to which agency can be applied when researching learning and development through and for work. On the other hand, this also adds to the fuzziness of the concept and its understanding. This is even more true given that some variants—for example, teacher agency—received little conceptual grounding, and the demarcations between the different concepts become somewhat blurred. For example, the distinction between teacher agency and professional agency is somewhat vague if applied to a sample of professional teachers. Relatedly, heterogeneity exists in the study foci used in the individual contributions. The studies vary, first, from an emphasis on the relational nature of agency as being reflexively aligned between individual and contextual affordances in work and training (Siewiorek and Gegenfurtner 2010) and, second, from an emphasis on the transformative nature of agency that highlights the role of agency as a driver for shaping one's work environment and learning processes (Damşa et al. 2010; Froehlich et al. 2015b). Heterogeneity also exists in the framing of the unit of analysis and the analysis methods, which may point to a lack of terminology and conventions at the empirical level. Illustrated by operationalisations of agency and units of analysis that cover a wide spectrum of enacted phenomena, the emerging status of the agency construct applied to work settings becomes evident. The high proportion of exploratory research studies indicates the incipient stage of operationalisation at which the studies are situated, which is reflective of this domain of research more generally. While this can indicate a potential risk of the construct of agency being too loose as an empirical phenomenon, it provides space for exploration and enriching conceptualisations.

Interestingly, the heterogeneity among the studies, which is so prominent at several stages of the research process, is less visible when it comes to the methodological approaches employed. On the macro level, there is a distinct emphasis on qualitative methods when studying agency at work in this part of the volume. This observation warrants reflection, especially because it is quantitative and mixed-methods studies that may be conducive for consolidating the research and producing more generalisable findings (Johnson and Onwuegbuzie 2004). Quantitative approaches often (but not always) have a rather exploitative rather than explorative stance to research, which necessarily drives consolidation in terms of definitions, operationalisations, and, in general, methods for data collection and analysis. Further, on the more micro level, a catalyst for the consolidation is transparency regarding methodological approaches and tools employed to examine agency. We have observed in this section of the volume that some of the studies have an implicitness in the presentation of, especially, analysis methods. This is particularly the case for the qualitative studies, where the terms and labels being used are less standardised than in the quantitative studies and in the field of statistics. While this warrants the use of explicit descriptions of the research process, it also indicates that there is more space wherein the notion can still be explored and elaborated. At the same time, even in the quantitative studies, agency at work may be more deeply examined as being an independent variable, predicting, for example, work outcomes or change processes or as being a dependent variable, being predicted, for example,

by individual attributes or socio-environmental variables at the workplace. Beyond the distinction between independent and dependent variables, the qualitative studies in this volume tend to suggest that agency at work may well be a mediating factor between individual and socio-cultural aspects, leading to more productive work processes (Damşa 2014; Nerland and Damşa *Forthcoming*), skill development (Froehlich 2017; Froehlich et al. 2014b) and transformations on the job (Gegenfurtner 2013). On a broader level, both qualitative and quantitative research on agency at work require an explicit account and a more elaborated discussion of the operationalisations, units of analysis and analytic tools employed and how they are aligned in order to generate an increasing and in-depth understanding of the notion and how it emerges at the empirical level (Säljö 2009). This is to a degree also linked to the heterogeneity of definitions and operationalisations mentioned above—clear, precise and explicit depictions are needed of what agency at work is and what it is not.

In sum, the heterogeneity observed in various aspects of the empirical studies affords both opportunities and challenges for the field. An important opportunity that is created by the explorative and often qualitative research is the differentiated perspective on the concept of agency at work. Looking from different angles and in detail at the various facets of the same underlying concept—agency at work—helps to embed the concept/construct in a wider network of concepts and generate a research agenda. At the same time, it triggers more efforts towards consolidating the construct. In the end, a more unified approach and understanding of how to research agency at work may be needed in order to replicate and triangulate findings between studies.

22.5 Accomplishments and the Challenges Ahead: Concluding Remarks

The reflective account in this chapter aimed at mapping and discussing the empirical and methodological efforts and findings presented in the chapters in Part II of this volume. This was done by creating a descriptive account of the studies' foci, operationalisations of the notion of agency methodologies employed and empirical findings and by analysing these using a framework inspired by the literature. We developed this framework by bringing together various relevant aspects from conceptualisations of agency within philosophical and sociological fields, wherein agency has been a prominent notion. Emirbayer and Mische's (1998) three agency dimensions served as a baseline for this framework. These dimensions, indicating the various facets of agency (iterative, practical-evaluative and projective) were complemented by aspects specific to its moral and utilitarian nature. In addition, some characteristics emerged bottom-up from the analysed text, which helped in grouping the studies as conceiving of agency as a phenomenon of constituted by relational, but also transformative aspects. This analytic lens proved very instrumental for the examination of the foci of the studies, which reflected conceptions of agency, operationalisations of the notion and the way the findings were framed in

relation to existing (or emerging) knowledge on agency at work. Through its hybrid nature, this framework allowed for a sophisticated interpretation of various facets of agency linked to professional learning and development by connecting it not only to processes that involved work within established structures and knowledge areas accumulated through practices developed over time but also to transformative practices that are oriented towards the future and lead to innovations. From this perspective, the framework was useful in examining the substantive contribution in these studies and in connecting it to conceptualisations and other research on agency. When examining the methodological aspects involved in empirical research on agency at work, a more tailored framework should be favoured that includes features allowing to analyse in a more elaborated manner the methodologies employed. This chapter provides a good point of departure in devising such a framework, especially considering that the field of research on agency is expanding rapidly.

With regard to the methodological approaches employed, a brief reflection note on the relatively reduced use of quantitative research methods in the studies in this section is appropriate. To some extent, it can be explained by the rather diverse conceptualisations of agency found in the literature, which naturally warrant closer inspection of what agency actually means in a particular context. In order to examine such contextualised research problems, qualitative studies are most indicated, as they allow in-depth explorations of uncharted or emerging territories (see Tavory and Timmermans 2014). At the same time, such approaches can also lead towards a “sectioning” of the construct into variations, such as creative agency, relational agency, agentic feedback seeking and transformative agency, as witnessed in the current chapters. Given the nature and the sample size of the qualitative studies reviewed, an aspect to consider when generating further elaborations based on their findings is whether such sub-concepts are indeed conceptually different from agency or whether they are artefacts of the context. This may generate challenges for arriving to a more conclusive understanding of the notion and for the long-term development and maturation of the field of research on agency. From this perspective, multi-method designs that also include quantitative aspects, which allow the simultaneous examination of multiple contexts and separating the context from the concept, should be considered in the next stages of research.

Regardless of the challenges laying ahead, the operationalisations, methodological approaches and findings presented the chapters in Part II of this volume serve as a framework within which agency at work can be further elaborated. Such a framework represents a baseline for further examining and understanding work-related learning processes, whether of relational or transformative nature, and whether oriented towards productive engagement with existing knowledge/practices or the creation of new ones. In a sense, this reflective account helps identify and highlight how these studies contribute to addressing the question posed by Simons and Ruijters (2014), on how one shapes one’s own professional development in order to remain professional. Furthermore, the studies examined here provide valuable input and support the understanding of agency beyond disciplinary boundaries, exclusively individual or collective conduct or actions, and the heterogeneous nature of the conceptualisations and methodological approaches employed. They reflect the

complexity at the empirical level, where agency is expressed in a plenitude of ways and drives actions that trigger further processes of learning and development. By clarifying characteristic features associated to agency at work, a better understanding of how professionals can engage in processes leading to their own development and innovation can emerge. Therefore, such empirical and methodological efforts to examine agency in depth or across contexts represent a contribution to both conceptual advancements and to the development of a toolbox useful for both research and practice.

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Part III
Concluding Comments

Chapter 23

The Multifaceted Nature of Agency and Professional Learning

Susanna Paloniemi and Michael Goller

23.1 Introduction

The chapters in this volume have provided inspiring insights on the interplay between agency and professional learning and development in contemporary work. They have brought into focus many conceptual, theoretical, and empirical perspectives. Throughout the book several features and assumptions of agency as a phenomenon have been discussed. Questions have been raised concerning core understandings of agency, the dialectics between the individual and the social context, the role of social relations, and the interaction between agency and changing work practices/structures. Temporal aspects have entered into discussions on organisational histories and individual life courses. Elements bound up with satisfaction and dissatisfaction have emerged strongly, for example, in discussions on professional identity negotiations, the role of emotions in rational decision-making, and creativity and innovativeness. Nor have collective aspects been neglected, with attention given to teamwork, collaboration, and collective learning in working life.

The variety of concepts used in discussing agency at work reflects the multifaceted nature of the phenomenon. Thus, mention is made of human agency, life-course agency, professional agency, work agency, creative agency, epistemological agency, relational agency, bounded agency, transformational agency, dialogical agency, agency beliefs, and identity agency. Other relevant concepts include innovative work behaviour, reflection, proactivity, intrapreneurship, grit, feedback seeking, and self-

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directedness. The authors' choices reflect not only their individual focus but also linguistic differences pertaining to agency as a phenomenon. As noted by Eteläpelto in her summary (Eteläpelto 2017, this volume), some languages (such as German) appear not to have a specific word for agency in common use. By contrast, others (such as Finnish) do indeed have an equivalent term available. This might explain, for example, why scholars from Germany have not made much mention of "agency" in discussing the phenomenon that occurs when individuals make choices, or perform actions based on such choices, in order to make a difference in their lives and environments.

The main contribution of this volume lies in bringing together different perspectives on agency (including their theoretical and conceptual frameworks), plus a number of empirical studies connected with them. Despite the differences, the chapters have at least one feature in common: agency is valued as something that is strongly embedded in the *professional learning* of individuals. Furthermore, agency implies individuals' active participation in professional practices and professional lives. Consequently, individuals and groups of individuals – insofar as they are agents – are seen as actively exerting control over their lives and the environments they live in (e.g. Emirbayer and Mische 1998; Eteläpelto et al. 2013; Goller 2017; Harteis and Goller 2014).

This concluding chapter briefly discusses the conceptual understandings of agency and also the empirical studies presented in the previous chapters. On the basis of these, it considers avenues for future research on agency and its relationship with professional learning.

23.2 Complementary Understandings of Agency at Work

As suggested in the chapter by Goller and Harteis (2017, this volume), theoretical perspectives on agency can be viewed as falling within two categories. Thus, agency can be understood as (a) something that people *have* (implying a personal capacity perspective) or (b) something that people *do* (implying a behavioural perspective). Both understandings are present in this volume. Five chapters include, primarily, a personal capacity perspective, i.e. the chapters by Goller and Harteis (2017), Kreuzer et al. (2017), Kwon (2017) and Raemdonck et al. (2017); as well as Wiethe-Körprich et al. (2017). These discussions (and the studies reported) focus strongly on the individual dispositions, capabilities, and competences that allow individuals to exercise agency in professional contexts. Interestingly, many of these chapters report the aim of developing measurement instruments to operationalise the features in question. This has been done with the aim of understanding why some individuals engage more often in a set of particular agentic actions than others. Taking a step further, a question is raised concerning how these features can be developed so that individuals are able to exercise their agency more strongly (see especially the chapters by Kreuzer et al. 2017 and by Wiethe-Körprich et al. 2017).

The diversity of theoretical and conceptual viewpoints is particularly evident in the 14 chapters in this volume that discuss agency from, primarily, a behavioural

Table 23.1 Categorisation of the 19 chapters along two dimensions: (a) a personal capacity perspective vs. a behavioural perspective and (b) an individual vs. a collective perspective

	Agency understood as a personal capacity	Agency understood as behaviour
Agency approached primarily as an individual phenomenon	Goller and Harteis Kreuzer et al. Kwon Raemdonck et al. Wiethe-Körpich et al.	Billett and Noble Collin et al. Edwards et al. Evans Harwood and Froehlich Hökkä et al. Smith Messmann and Mulder Palesy and Billett Rajala and Kumpulainen Vähäsantanen et al.
Agency approached primarily as a collective phenomenon		Hopwood Kerosuo Ylén

perspective (Billett and Noble 2017; Collin et al. 2017; Edwards et al. 2017; Evans 2017; Harwood and Froehlich 2017; Hopwood 2017; Hökkä et al. 2017b; Kerosuo 2017; Messmann and Mulder 2017; Palesy and Billett 2017; Rajala and Kumpulainen 2017; Smith 2017; Vähäsantanen et al. 2017a; Ylén 2017). These chapters share an understanding of agency as actions manifested in the social contexts of professional lives, but – at the same time – they differ in terms of core assumptions on the nature of agency. Some adopt a more or less explicit conceptualisation that focuses on the decisions, choices, and actions of individuals or collectives within their working lives; others place more emphasis on the interrelational nature of agency, as something operating between the person and his/her social context.

In addition to the two perspectives on agency as something that people either *have* or *do*, the chapters differ in another important respect. Some of the chapters discuss agency as primarily an individual phenomenon, while others view it more as a collective phenomenon. Accordingly, agency can be approached (and empirically analysed) in terms of individual capabilities and actions; however, it can also be viewed as something pertaining to work teams or professional groups. Table 23.1 positions each of the 19 original chapters of this volume within the two proposed dimensions, which encompass (a) a personal capacity/disposition perspective vs. a behavioural perspective and (b) an individual perspective vs. a collective perspective. This classification is obviously a simplification; however it has some utility in terms of providing an overview.

Table 23.1 shows that the majority of the chapters discuss agency at work as a *behavioural* phenomenon. Out of the 19 original chapters, only 5 explicitly approach agency as a capacity that individuals possess. It is perhaps not surprising that these five chapters also share the notion of agency as an individual-level phenomenon. The fourteen chapters approaching agency from a behavioural perspective differ

from each other in terms of the *determinants* of the actions taken. While some put more weight on the sociocultural possibilities and resources available to individuals (or collectives), others focus more on the *active role of the individual* in constructing the circumstances that apply. Only two chapters in this volume (by Evans 2017 and by Billett and Noble 2017) explicitly discuss agency, simultaneously, from both a personal capacity perspective and a behavioural perspective.

As noted above, within this book as a whole, agency is most often examined at an individual level (see Table 23.1). The authors following this approach discuss agency either as something that single individuals do or else as something that allows these (single) individuals to act agentially in the first place. Nevertheless, a few authors here (chapters by Hopwood 2017; Kerosuo 2017; Ylén 2017) follow a different path, discussing agency at work as something that can be approached more as a collective phenomenon. The focus thus shifts from individuals to groups. Here it is important to note that many of the chapters in this volume discuss agency *also* as a collective endeavour, even though the analysis and the focus are mostly on the individual (e.g. chapters by Billett and Noble 2017; Collin et al. 2017; Edwards et al. 2017; Hökkä et al. 2017b; Palesy and Billett 2017; Vähäsantanen et al. 2017a; see also Damşa et al. 2017). In other words, some chapters take both individual and collective approaches into account, and some of them emphasise the mutual interplay between the two, instead of making a distinction between them.

Differences in the understandings of agency occur mostly in regard to the dialectics between the person and the social practice. While some chapters focus strongly on agency as something that transforms either the individual or social practices, other chapters place more emphasis on how the individual and the social level relate to each other. The summaries of Parts I and II of this book both emphasise these differences (Eteläpelto 2017, this volume; and Damşa et al. 2017, this volume).

The core understandings of agency operate as a framework for setting up empirical research on agency at work. Consequently, the methodological decisions presented in the chapters lead to a variety of approaches for researching agency and professional learning (see next section).

23.3 Empirical and Methodological Implications for Research on Agency at Work

Within previous research literature, agency has often been referred to a multidisciplinary concept – a phenomenon which has been theoretically discussed, but which is still deficient in empirical research (e.g. Eteläpelto et al. 2013; Goller 2017; Hitlin and Elder 2007). The chapters within this volume, on the other hand, seem to indicate steadily increasing and diverse empirical research on agency within the social sciences; this applies at least within the field of professional learning and the professional lives of humans more broadly.

The 11 original chapters in the second part of this book nicely illustrate the empirical research conducted on agency at work, thus supplementing the more theoretical discussions in the first part of the book. The various understandings of agency and learning in professional contexts result in differences in research aims, research questions, and research strategies, incorporating a wide range of methodological decisions, analytical lenses, and research settings. As summarised by Damşa et al. (2017, this volume), the 11 original chapters in Part II vary according to the focus of the studies, the operationalisations of the concepts under investigation, the units of analysis, and the analytical approaches employed.

The majority of the empirical studies presented here are qualitative in nature, employing mostly qualitative interviews and field observations as means of data collection. The studies using these approaches have contributed to an understanding of the practices and manifestations of agency (and/or agentic learning) in specific situational circumstances (e.g. amid reforms in working life, changes in the organisation of the work, demands for new work practices, or educational interventions). They all provide deep descriptions of the situation-specific circumstances, or the historical and cultural circumstances, that enable or constrain agency throughout working life. Interestingly (but not altogether surprisingly), it is these kinds of studies in particular that have advanced the theoretical understanding of agency as a behavioural phenomenon, in so far as they have elaborated discussions on the dialectics between the person and the practice in agency related to professional learning.

This volume has also presented more quantitatively orientated research on agency-related phenomena (see the chapters by Goller and Harteis 2017; Harwood and Froehlich 2017; Kreuzer et al. 2017; Messmann and Mulder 2017; Raemdonck et al. 2017; Wiethe-Körprich et al. 2017). Some of these studies share the aim of operationalising the (theoretically assumed) capabilities or dispositions that might explain why some individuals engage in agentic actions more than others. Others employ instruments that have already been developed, exploring how individuals' engagement in agentic actions relates to other concepts of interest (such as "flourishing", reflection, expertise development). All of these chapters share a desire to generate measurable and generalisable evidence on the effects of agency on individuals' development throughout their professional lives. It appears likely that the measures developed will be used as tools to investigate agency in future studies. Thus they could be used to investigate agency across various cultures (e.g. in nations, organisations, domains) or to look at the (dis)continuities of agentic dispositions across time, educational interventions, or structural changes. Furthermore, those instruments might be used to scrutinise the findings derived from more exploratory research on agency, based on qualitative research methods.

So far, teachers have constituted one of the most studied groups in the domain of agency and professional learning. This is clearly apparent in the present volume. Out of the 19 original chapters included, 8 of them apply to the teaching profession (chapters by Edwards et al. 2017; Harwood and Froehlich 2017; Rajala and Kumpulainen 2017; Messmann and Mulder 2017) or to educational domains more broadly (Hökkä et al. 2017b; Vähäsantanen et al. 2017a; Kreuzer et al. 2017; Wiethe-Körprich et al. 2017). Another well-represented domain within this volume

is that of the social and healthcare sector (chapters by Billett and Noble 2017; Evans 2017; Goller and Harteis 2017; Hopwood 2017; Hökkä et al. 2017b; Palesy and Billett 2017; Vähäsantanen et al. 2017a). However, the professional domains used for research are extending along with changes in working life. Thus, in this volume, we have chapters by Collin et al. (2017) and by Ylén (2017) on the manifestations of agency among IT professionals. Kerosuo (2017, this volume) presents a study on collaborative “knotworking” in interdisciplinary construction planning. Evans (2017, this volume) discusses agency among (in addition to nurses) freelance media professionals. For his part, Smith (2017, this volume) uses an example from the domain of retail work.

Current trends in working life call for changes in organisations, with a focus on innovativeness and productivity. An agentic perspective has the potential to clarify factors that assist both individual and organisational developments. These appear to include, notably, active participation, proactive behaviour, the transforming of work practices, and reflecting on oneself as a future professional. All of this is contained within the view that agency is required not only for individual learning and development but also for the development of organisations. Although the individual aspect has been emphasised in the existing literature, the organisational aspect has emerged as one that should be followed up in future research projects.

23.4 An Agentic Perspective on Professional Learning and Development

Recent years have seen increasing theoretical interest in agency related to professional- and work-related learning (e.g. Eteläpelto et al. 2014; Billett 2011; Goller and Billett 2014; Harteis and Goller 2014; Smith 2012; Philpott and Oates 2017; Vähäsantanen et al. 2017a). However, this has not yet been the explicit focus of many empirical studies in the past. Nevertheless, efforts to empirically research agency in relation to professional learning and development have recently been taken up among the scholars, as can be seen in the chapters of Part II within this book.

The empirical studies presented here show how professional learning can be understood from a range of viewpoints. These include notably competence and knowledge acquisition, expertise development, deliberate transformations at work, *the crafting of professional identity within a life course*, and participation and collaboration in the work community.

In addition, the relation between agency and professional learning can be conceptualised in a variety of ways (see also Goller 2017; Tynjälä 2013). Learning can be understood as an *outcome*, with agency viewed as a premise for learning and development. On the other hand, professional learning can be understood as a *means* for strengthening agency at work. It is also possible to understand agency and professional learning almost as synonyms, arguing that learning *is* agentic, taking place only when agentic processes and behaviour are present. Despite the differences in the approaches taken, all the chapters in the book view agency as meaningful for the

professional learning and development of individuals and/or collectives, especially at the present time, when work is undergoing rapid and turbulent changes.

The different understandings of the agency/learning relationship lead to different notions regarding the support needed for professional learning and development (see also Eteläpelto 2017, this volume). On the one hand, professional learning may be understood as the evolution of competences, dispositions, or beliefs that increase a person's agency – that is, the agency that he/she can use in the workplace. In that case, most developmental efforts will be targeted at the advancement of the individual (e.g. through special training). By contrast, professional learning may be understood as determined mostly by the affordances in the work environment. In that case, the focus will turn towards transformation of the structures, practices, and cultures of the work, involving also the workplace communities, and the relationship between the individual and the social. Viewed in this light, organisations could introduce programmes aimed at transforming organisational structures (such as the hierarchies that are in place) and work practices. Following such changes, individuals might operate under fewer constraints and be able to exercise more agencies as a result.

Nevertheless, it is important to note that the discussions in this volume have given evidence of an *interplay* between the (active) individual and the sociocultural circumstances of the workplace. In practice, often due to a lack of resources, educational interventions in work and education tend to focus purely on one aspect or the other, even if the significance of both the individual and the social contexts is recognised. From the point of view of agentic professional learning, there is a need for a personnel development strategy that would take into account both the individual and the broader structural perspectives (see Vähäsantanen et al. 2017a).

Many scholars working in the field share the notion that active participation implies *both* agency and professional learning at work. Agency can thus involve participatory engagement in work activities, manifested in creative efforts to bring about innovation, or in daily efforts to jointly solve pressing problems of professional practice. In addition, participatory agency can be seen as present when individuals engage in self-directed learning activities such as feedback seeking or crafting new experiences at work (see also Goller and Billett 2014). In fact, many scholars have emphasised the close relation between participation in work practices and learning (e.g. Billett 2004; Lave 1993; Smith 2012; see also Eteläpelto 2017, this volume). Agency (individual, but taking the form of participatory action) can involve, for example, making comments and expressing one's own opinions in the work community, or it may be present when individuals collaborate in the developmental actions of the organisation (Billett 2004; Collin et al. 2015; Vähäsantanen et al. 2017a, b).

Looking at this volume as a whole, and at the empirical and methodological choices taken, one can conclude that it is unproductive to view agency at work from a single perspective. More concretely, one is not restricted to considering (a) whether individuals or collectives *possess* agency or *behave* agentially and/or (b) whether the emphasis should be on the *individual* or on the *social context*. We see the richness of the contributions in this volume as consisting in their complementary nature. Thus, an agentic perspective on professional learning and development seems to require a focus on *individuals and individual capacities*, but also on *actions embedded in the*

social context and practices of the work (see, e.g. Goller 2017; Smith 2012). Running across the discussions on agency in work contexts, there appears to be agreement on the notion that it concerns the dialectics between the person and the context (e.g. Edwards 2015; Billett and Noble 2017, this volume; Evans 2017, this volume; Kwon 2017, this volume).

At the same time, in conjunction with the above, we would suggest that scholars concerned with agency and professional learning should make explicit how they conceptualise the concepts in their writings. The proposed categorisation within two dimensions (personal capacity vs. behaviour and individual vs. collective) offers one example of this. When personal assumptions about the nature of agency and professional learning are made explicit, the reader can relate any specific notions presented to ongoing wider discussions (see also Goller and Harteis 2017, this volume).

23.5 Future Research on Agentic Learning at Work

The aim of this book was to collect, bring together, and discuss the range of perspectives on agency at work, plus the empirical research generated by these perspectives within a single volume. The many facets of research on agency at work have been displayed. However, there is a range of viewpoints for future research still to be explored. For example, does agency manifest itself differently in terms of collectivity, participation, resistance, or denial? What kinds of individual capacities are most valued in terms of behaviour in the workplace and in terms of professional development? What is the relationship between individual and collective agency? What are the most critical premises for the processes and/or outcomes of agency and learning? What kinds of multidisciplinary methodological choices can be utilised within the field? Some of these are outlined below.

23.5.1 Exploring Collective Agency at Work

As noted above, most of the chapters, or at least the empirical investigations reported, approach agency at work primarily from the perspective of individuals (what individuals have, or what they do). Nevertheless, many of the chapters in this volume do discuss agency also as a collective phenomenon, notably via attention to the significance of social relations at work (colleagues, groups, organisations, customers) or to shared ways of developing and transforming work practices in the work community (e.g. chapters by Billett & Noble 2017; Collin et al. 2017; Hökkä et al. 2017b; Palesy & Billett 2017; Vähäsantanen et al. 2017a, this volume). What now requires further consideration is the analytical level of such collectives. This could mean, for example, studies on professional groups, units, and organisations exemplifying different networks, collaborations, (sub)cultures, societies, nationalities, and cultural identities (see, e.g. Hökkä et al. 2017a). In a changing and global world of work,

with an increasingly heterogeneous workforce, the agency of different collectives will not merely be required; it will have to be deliberately developed. In this sense, collective agency will become a prime goal for professional learning and development, in addition to the agency of single individuals. This will undoubtedly open up avenues for research on professional learning and development, in organisational and educational research, and within the social sciences more broadly.

Here it will be important to bear in mind that it is individuals who form collectives, who act through social practices, and who construct these practices. Furthermore, individual and collective forms of agency are not truly separate entities; in fact, they are closely related, as presented in this book (e.g. chapters by Collin et al. 2017; Edwards et al. 2017; Hökkä et al. 2017b; Kerosuo 2017; see also Haapasaari and Kerosuo 2015; Hökkä et al. 2017a). One can say that the agency of individuals or collectives depends on structures and cultures, but also contributes to the transformation of the structures/cultures in question (see also Archer 2000). Thus, both personal and social factors can facilitate or restrict agency at work. At the same time, questions remain open as to the features (competences, capabilities, beliefs, etc.) that are required so that individuals are able to exercise collective agency at work. Consequently, we need a better understanding of both (a) the dispositions that single individuals require to act agentially in relation with others and (b) the social conditions that are relevant when collectives of individuals exercise agency through collaboration at work.

As demonstrated in the studies reported here, agency manifests itself in ways that are intertwined with individual life histories, capabilities, goals, values, and social circumstances. Throughout this volume, agency at work is seen as active and proactive by nature – striving for something new, anticipating, self-directing, goal orientated, and transformative. However, agency can also manifest itself in more passive ways. As the story of Chris (Smith 2017, this volume) illustrates, seemingly reactive behaviour can be the expression of a very strong agentic and proactive goal for the actor. Similarly, previous studies on “resisting” agency, concerning active choices towards nonparticipation (e.g. Billett 2000; Collin et al. 2015), point out that silence and inaction can manifest a strong agentic goal for the individual, even though it is, from the perspective of the community, not proactive, innovative, or participatory at all (see also next section). For the purposes of research, this line of thinking sets up certain requirements, putting a special emphasis on, for example, self-reports and the interpretations given by the actors themselves, rather than on observable actions. More broadly, the deliberate use of multi-method approaches can offer elaborations on agency and professional learning at work (see also Damşa et al. 2017, this volume).

23.5.2 The Normative Dimension(s) of Agency at Work

Becoming a professional agent implies seeing oneself as an active participant and learner (Toom et al. 2015) within the social context of the work and work community. An understanding of agency as a driving force, tending to influence something

(whether agency is understood as a personal feature or as a behavioural action), implicitly suggests a normative goal for making things better, developing, and learning. This means that agency aims at achieving something which is considered valuable, desirable, and achievable. From the perspective of professional learning and development, what is valued can include many things, notably professional expertise, proactive action, responsibility towards the work or towards oneself, innovativeness, participation and collaboration at work, and developing the practices of the work and the work community.

Viewed in this light, agency at work always has a normative dimension – though the “goodness” in it will depend on the perspective of the actor. Within this volume, this is most visible in the chapter by Ylén (2017). There, agency at work is discussed in relation to professional virtues at work. One can reasonably ask what such a virtue might consist of. Would it be the good of the company, the community, professionals, individuals, the management, the employees, or the customers? Or more broadly, society or a good life? Ylén (2017, this volume) emphasises, on the basis of her ethnographic study, that the pursuit of meaningful work and “goodness” is about the virtues important to a particular group of professionals within a specific work organisation.

It is considerations such as these that lead one to envisage situations in which individual goals are dissimilar to those of the organisation. As noted above, even though agency is usually associated with individuals or groups who choose to function in a proactive and innovative way, this may not always be the case. In fact, the opposite may occur. Thus, strong individual agency can be manifested in a choice *not* to participate in social relations, collaboration, developmental projects, or decision-making (Billett 2000; Gustavsson 2007; Toom et al. 2015). This kind of “resisting” agency (Collin et al. 2015) might actually be harmful for the development of the organisation, even if it is good for the individual.

In addition, the exercising of agency might also be perceived as detrimental from a more traditional and “conservative” organisational perspective. The transformation of existing work practices can, for instance, require individuals or collectives to violate existing norms and rules within the organisation (Frese and Fay 2001). From a short-term perspective, such efforts may not result in what the organisation considers to be a positive outcome, such as higher productivity (Frese and Fay 2001; Goller 2017). In any case, it follows that strong individual agency is not always, or not self-evidently, a means towards desirable organisational development (Hökkä and Eteläpelto 2014). Here, note should be taken of ongoing discussions on proactivity in the field of organisational behaviour. Within the literature, mention has been made of the potentially destructive components of agency (Spector and Fox 2010; Tornau and Frese 2013). Such destructive agency manifests itself when employees actively attempt to harm the organisation or other individuals within the organisation. This once again falls within the notion that manifestations of agency may not always be desirable from an external perspective.

23.5.3 *Utilisation of Research Methodologies*

The empirical studies discussed in this book have approached agency through different conceptualisations, operationalisations, and methodological accounts (see Damşa et al. 2017, this volume). The studies have produced new insights on professional agency at either a local and context-specific level (i.e. domain or situation specific) or at a broader level, aiming at more generalisable knowledge. The majority of the research conducted so far falls into the former category. For the future, there is room for hypothesis-testing investigations on the findings from the exploratory and qualitatively oriented research that has so far been conducted. For example, comparative research on agency in culturally diverse contexts of work, learning, and professional lives could illuminate the nature of agency at work more generally. For this purpose, quantitative research can provide a key, for example, in developing instruments for measuring agency at work (see also Vähäsantanen et al. 2017c). One would expect these to be tested and validated in different, possibly international, domains.

Just as work and individuals change over time, so do the manifestations of agency. The studies here underline the temporal nature of agency in individuals' lives and in changing sociocultural circumstances. There thus remains a need for something that has been largely lacking so far, namely, longitudinal designs. The studies in this volume show that there is already a good conceptual and methodological foundation for longitudinal research within the field.

Much remains to be done in seriously studying the dialectics of agentic professional learning through the limited research methodologies available (see also Edwards 2015). Nevertheless, a good start has been made in efforts to develop the field. Via closer collaboration with other disciplines (such as economics or organisation studies), we have good possibilities for researching the agency of professionals and their agentic learning in the future. The present volume constitutes a step forwards in this endeavour.

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