Betsy Ng *Editor*

Graduate Employability and Workplace-Based Learning Development

Insights from Sociocultural Perspectives

Springer

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Part I
Opening

Chapter 1
An Overview of Sociocultural Perspectives on Graduate Employability and Workplace-Based Learning Development

Betsy Ng

Abstract This book applies sociocultural perspectives in understanding the higher education agenda and latest issues, in relation to graduate employability and workplace-based learning development. It offers theoretical and empirical analyses that institutions, decision-makers or academics can work together to enhance graduate employability in this age of uncertainty. The opening chapter introduces the two sections of the book with the connectivity to five chapters each. The two sections are importance of graduate employability and workplace-based learning development and outcomes, respectively. Both sections highlight various debates about the dynamic relationships of social and cultural factors in a workplace as well as their importance on developing graduates' employability skills. This chapter provides an overview of the chapters and describes the relationship between graduate employability and workplace-based learning. Finally, it connects the ten chapters, highlighting the key features of each chapter.

Introduction

Graduate employability is viewed as a set of attributes that graduates will have to gain employment and stay successful in their chosen occupations (Fleming & Haigh, 2017). It benefits not only the graduates themselves, but also the workforce, the community and the economy. As such, there is a need to develop graduate employability for today's globalised world (Pham & Jackson, 2020). Workplace-based learning is a process in which students acquire knowledge in universities and apply it in the workplace. The sociocultural standpoint views workplace-based learning as a social and cultural process influenced by the contexts in which it takes place. One of the sociocultural perspectives is Community of Practice (CoP). CoP, which is a collection of individuals with a shared repertoire and mutual engagement,

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is useful to examine graduate employability and workplace-based learning. Sociocultural approach is a means to increase the understanding of university students' expectations and ability to manage their future work. It also involves collaborative learning within an organisation that is associated with workplace-based learning development. Individuals could then contribute the social knowledge embedded in the CoP within an institution or organisation.

Despite the importance of graduate employability and workplace-based learning development from sociocultural perspectives, research in this area is still limited. Particularly graduate employability is receiving increasing recognition as it influences both higher educational and work-related areas. This volume aims to fill the knowledge gap by documenting recent attempts to conduct systematic and multidisciplinary research in the areas of graduate employability and workplace-based learning development from sociocultural perspectives. It also presents current empirical research and theoretical underpinnings in the field, with findings to inform the policy and practice, and future research directions. The chapters of the book highlight various sociocultural perspectives used to understand how individuals build and manage their professional identity upon graduation to the future workplace.

The present book will be the first volume on the perspectives in sociocultural research that focuses on the international contributors of graduate employability, higher education research and workplace-based learning development. This volume offers theoretical and empirical analyses that institutions, decision-makers or academics can work together to enhance graduate employability in this age of uncertainty. It is divided into four parts: an opening chapter, two sections and a closing chapter. This opening chapter contextualises and presents an overview of the chapters in the two sections: importance of graduate employability and workplace-based learning development and outcomes. Finally, the closing chapter synthesises the key discussion points, theoretical contributions and future directions for research.

Importance of Graduate Employability

This section consists of five chapters that describe the importance of graduate employability and its development over the years from a sociocultural perspective. It also presents sociocultural research in work-integrated education and internship that explored the university students' experiences to develop graduate employability. This section begins with Chap. 2, in which Billett contextualised the importance of graduate employability and addressed its development in Australia. He emphasised that tertiary education provisions need to focus on developing adaptability as a graduate learning outcome. This chapter draws on three recent projects involving over twenty universities across a range of disciplines, and it adopts a sociocultural perspective of what the higher education experiences afford students and how the development of graduate employability could be generated.

Chapter 3 by Ng postulates that the social and cultural dimensions of professional learning in workplace contexts may nurture individual's involvement and belongingness within the community. She proposed a sociocultural perspective to understand the social and cultural aspects of a workplace. A sociocultural perspective allows us to understand the constraints and dynamics of a working context, whereby individuals may find struggle at work and get stressed when they face challenges or setbacks. Besides the benefits of a sociocultural perspective, this chapter also explores the connection between graduate employability and workplace.

Chapter 4 presents an investigation of how Singaporean tertiary education institutions' continuing education and training (CET) programme provisions. With a growing global emphasis on aligning tertiary education with graduate employability, Leow and Billett adopted a sociocultural perspective to understand the learners who went through the CET programme. The authors also examined how best the learners acquired the knowledge and how participation in CET could develop employability. This chapter proposes how CET programme might be effectively designed, developed and enacted. Findings in promoting employability and implications are discussed.

Chapter 5 is an empirical study that explores graduate employability and graduates' employability skills such as communication, teamwork and critical thinking. Pham suggested that graduates must develop these employability skills in their workplaces. She utilised the sociocultural perspective as the theoretical framework from which to examine the factors that determine international graduates' communication competencies in the workplace. This qualitative study was conducted using fifteen international graduates and deployed in-depth interviews as the main data collection method. This chapter presents that culturally diverse work environments and living and work experiences had profound impacts on the international graduates' communication competencies in both their short- and long-term employment journeys.

Chapter 6 by Tang explores the challenges faced by Chinese international graduates in achieving positive employability outcomes and their responses to the challenges in the Australian labour market. Her study found that graduate employability is determined by the following capitals: human, cultural, social, identity, psychological and agentic capitals. There are also contextual, social and cultural factors related to graduate employability. She deployed a sociocultural approach to explore the challenges associated with employability capitals faced by fourteen Chinese international graduates in Australia. Her findings revealed three key challenges, namely challenges associated with the six capitals intertwined with each other; challenges worked as triggers for participants to develop and build capitals; and challenges faced by participants that were temporary.

Workplace-Based Learning Development and Outcomes

Part Two of the book consists of five chapters that describe the workplace-based learning development and its related outcomes. This part begins with Chap. 7 that

examines how a partnership between schools and external organisation could provide learning opportunities for teachers and other partners to develop new competencies and practices. Seow, Ho and Hung proposed the model and process of partnership to improve lower-track students' science learning and well-being. Using a sociocultural perspective, the partnership process, meetings, lesson design and enactments, and interviews with students and partners were documented. The authors concluded that partnership could develop new competencies and expand expertise to enhance employability of individuals in organisations.

Chapter 8 by Chua investigated problem-based learning (PBL) on preservice teachers using Vygotsky's theory on zone of proximal development as one of the sociocultural perspectives. PBL requires students to be engaged with a real-world problem. In particularly, there is an increasing need to harness the affordances of technology to engage students in their learning in this current teaching and learning landscape. In this chapter, preservice teachers were immersed in either a traditional PBL environment (tPBL) or technology-enhanced PBL environment (ePBL) to explore their learning experiences. Such empirical study is pivotal to the teachers' motivation as they design learning environment to inculcate in their learners the motivation and passion to learn.

Chapter 9 by Chiam provides a review of the fundamental changes to how we live and work due to coronavirus disease pandemic. As the global crisis of the COVID-19 disrupted the job landscape and triggered unprecedented uncertainty, it is important to understand the shifts in employers and employees' priorities, as well as acceleration of digital skills and virtual tools for working and learning remotely. Using a sociocultural perspective, the author emphasised the need for an inclusive collaboration culture that encourages social network and connection with others to promote a sense of belonging and collective learning. She concluded her chapter with some recommendations for moving towards a more inclusive collaboration culture to build a resilient workforce.

In Chap. 10, Yang explored the changing nature of work whereby workers engaged in job crafting to improve person-job fit between job characteristics and their own abilities, needs and preferences through a sociocultural perspective. Based on two case studies conducted in Singapore, she combined ideas from theories of 'job crafting' and learning to explore the job crafting practices adopted by cooks in the restaurants, and the relationship between job crafting and learning. Findings indicated that although the cooks did not know about the concept of job crafting and it was not a conscious choice for them to craft their jobs, they were actively engaged adopting different forms of job crafting within the constraints of their work environment.

Finally, Chap. 11 is an empirical study on workplace-based learning development. Shien highlighted the importance of internship which is a high-impact form of experiential learning. Internship provides opportunities for students to learn and develop learning strategies at the workplace. Positioning workplace activities as internship learning experiences, this chapter examines the boundary objects that assisted and hindered interns' boundary crossing ability at their internship workplace. Using a phenomenological stance, the author examined workplace engagements which consist of technology and human actors that interactively facilitate

internship learning from a sociocultural perspective. Empirical data in this chapter offer new insights on how learners can engage with boundary objects for professional workplace learning.

Conclusion

Each chapter contributes to the existing literature and research on graduate employability and workplace-based learning development from a sociocultural perspective, which provides an impetus for future studies. Using the sociocultural lens to investigate how learning experiences could afford students and develop their graduate employability is still in its infancy. In addition, the sociocultural approach is useful to understand a workplace community and workplace-based learning in terms of social and cultural process. Retrospectively, stakeholders from institutions of higher learning, continuing education institutions, government agencies, as well as employers, instructors and students should have ongoing dialogues to connect between graduate employability and workplace-based learning development. Finally, this book aims to be an informative and insightful resource for anyone who is interested in higher education research in graduate employability and workplace-based learning development.

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Part II
Importance of Graduate Employability

Chapter 2
Promoting Graduate Employability: Key Goals, and Curriculum and Pedagogic Practices for Higher Education

Stephen Billett

Abstract Securing employability outcomes have increasingly become a primary focus of governments, employers, higher education institutions and students. However, employability is more than the initial transition to work for graduates, and it is about the ability to sustain employment and seek advancement across working life. Hence, tertiary education provisions need to focus on developing adaptability as a graduate learning outcome. Drawing on three recent teaching and learning projects in Australia involving over 40 sub-projects from over 20 universities across a range of disciplines and adopting a sociocultural perspective of what the higher education experiences afford students, on the one hand, and how students come to engage with those experiences, this chapter seeks to identify how the development of graduate employability be generated. The chapter commences with the discussion about the ways WIL experiences can promote graduate employability from a sociocultural perspective, then advance considerations about how work-integrated education (WIE) can realise the educational goals required to achieve it and then the alignment between those goals and the kinds of curriculum considerations and pedagogic practices that need to be adopted to achieve those outcomes. The two distinct phenomena (WIE and WIL) are also elaborated and their alignment with developing employability advanced.

Promoting Graduate Employability

Governments, employers, higher education institutions and students are all seeking to secure employability outcomes from the provision of higher education. Governments are keen to promote economic goals and innovations, workplaces are needing workforces to respond to emerging challenges to be sustained, higher education institutions want strong graduate employment records and, most importantly, graduate want their investment in time, effort and resources to lead to employment in their

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chosen discipline. However, employability is more than securing initial employment for these graduates, and it is about being able to sustain employment and seek advancement across working life. Hence, more than initial preparation for employment, tertiary education provisions need to develop the kinds of capacities that will allow its graduates to respond to changes and be adaptable as occupational and workplace requirements change and evolve over time.

Consequently, more than 'job readiness' (i.e. the ability to apply specific occupational capacities within particular circumstances of practice), higher education goals, curriculum and pedagogic practices need to focus on developing employability as a graduate learning outcome. Drawing on three recent teaching and learning projects in Australia in higher education that involves over 40 sub-projects across over 20 universities across a range of disciplines and adopting a sociocultural perspective of what the higher education experiences afford students, on the one hand, and how students come to engage with those experiences (Billett, 2006). In all, this chapter seeks to identify how the development of graduate employability can be realised through work-integrated education and work-integrated learning to achieve these kinds of educational goals, and the curriculum and pedagogic practices that are directed towards achieving those outcomes. Taking a sociocultural perspective, the chapter commences with a discussion about aligning work-integrated education with employability goals. This includes a consideration of the kinds of educational goals and processes required to achieve it and the kinds of curriculum considerations and pedagogic practices needed to achieve those outcomes. The case is drawn upon from a range of disciplines that constantly confront change in the requirements for work and the capacities of workers in those fields.

Aligning Work-Integrated Education to Promote Employability

Work-integrated education (WIE) has the capacity to promote employability through considered design, enactment and engagement (Cooper et al., 2010). These are important considerations as graduate employability and, specifically, the successful transition from higher educational programmes to employment aligned with those programmes is now a common and key goal for universities globally (Bennett et al., 2017; Jackson et al., 2019). Countries with advanced industrial economies are now focusing their higher educational programmes to prepare graduates for successful transitions to work (Bennett et al., 2019) through the provision of workplace experiences and their integration with what is being learnt through those programmes (Billett, 2015). There are often efforts to align what experiences are provided and what is taught to students with employable outcomes for graduates based on statements of professional occupational standards and/or national curricula. Added here are difficult labour market conditions for young people and uncertainties about ongoing careers that together are demanding higher educational experiences provide

outcomes that are generative of graduate employability (Knight & Yorke, 2004). These demands are now being made by students, their parents, and employers, as well as by governments. Perhaps most commonly and narrowly, these concerns are directed towards readiness for employment upon graduation, sometimes referred to as being 'job ready' (Jackson, 2016; Jackson et al., 2019). That is, graduates have the capacities or are able to adapt what they have learnt from their higher education programmes to the specific occupational and work practice requirements where they will seek employment (Coll & Zegwaard, 2011). Yet, beyond this initial transition from tertiary education to employment, contemporary working life requires graduates to adapt what they know, can do and value to respond to the changing occupational and workplace requirements that are necessary for remaining employed and securing advancement. It is not possible to predict what might constitute these changes, even in the short term as the recent coronavirus has indicated, let alone in the longer term. However, this emphasises the ability of graduates to be able to adapt to changes across their working lives. Hence, higher education provisions need to consider how this adaptability might be developed in its students and graduates. That is, higher education programmes need to be able to develop and enact educational provisions that promote adaptability within the specific occupations for which students are being prepared and in which they will seek employment and advance their careers (Eraut, 2004; Jackson et al., 2019).

This requirement comprises a significant challenge to higher education in terms of the kinds of experiences it provides, how teaching progresses, and how students come to engage and learn (Bennett et al., 2016). Yet, fundamentally, this is what higher education should set out to achieve: that is, developing (a) strong foundations of occupational knowledge, (b) understandings and practices comprising variations in the manifestation of those occupations as enacted in specific work settings and (c) the capacities and agency to respond positively and effectively to these challenges (Billett, 2015). Whilst such propositions may seem ideal and aspirational, they are what higher education should aim to realise: generating students' capacities unconstrained by the circumstances of its generation, but that are broadly applicable.

Advanced here are considerations about how WIE can be positioned to realise these kinds of educational goals through supporting effective work-integrated learning (WIL) in ways leading to positive graduate outcomes, going beyond the transition from education to work and generating adaptive qualities in graduates (Billett, 2019). WIE comprises the design, organisation and implementation of educational experiences in both work and educational settings intended to develop the kinds of capacities graduates will need to become employable. WIL comprises how students come to engage in and with experiences provided by both work and educational settings and how, through both situationally immediate and imaginary processes, they come to learn effectively and reconcile those experiences in ways aligned to promote their employability in both the short and long term. Here, employability is seen as more than securing employment after graduation. It is also about being able to respond to new tasks and challenges that arise in daily work, the capacity for advancement and/or broadening of roles, and being responsible for the currency of their professional knowledge.

This chapter draws upon curriculum theorisation and recent empirical studies to propose that these two distinct phenomena (WIE and WIL) can be viewed in terms of the intended, enacted and experienced curriculum (Marsh, 2004). Importantly, the alignment amongst these concepts is directed towards developing the kinds of occupationally specific understandings, procedures and dispositions, and those associated with effective engagement in working life, that have become the key goals for higher education (Billett, 2015). It is through these considerations that specific experiences are selected and provided for students, including the deliberate provision and integration of those experiences (i.e. the intended and enacted curriculum). But, without students being positioned to actively engage in and secure reconciliations and advancements amongst these experiences (i.e. the experienced curriculum) as directed towards their learning goals, the prospects for employability outcomes are likely far more limited (Lobato, 2012). Indeed, central to both the enacted and experienced curricula is the readiness and agency of both educators and students, who in the contemporary era are time jealous or time precious—not time poor—which shapes how they come to engage. This quality also emphasises personal as well as institutional factors.

Employability

With concerns about the role of higher education in securing graduate employability, it is worth considering what constitutes employability and what this means for educational provisions. Also, given the associated concerns about adaptability, there is a need to be clear about what employability means for being adaptable and the educational means for securing it. The conception of employability adopted here has four dimensions: (a) being employable (i.e. having specific work-related and occupational capacities); (b) sustaining employment (i.e. remaining current and employable); (c) securing advancement (i.e. gaining promotion or becoming more broadly skilled); and (d) transitioning to new/other occupations (i.e. being able to move into new occupations).

Firstly, securing employment in the occupations that are the focuses of students' studies and moving smoothly from education into that employment means that graduates will need the capacities required to enact the occupation, albeit at an initial level of competence, but in the particular circumstances where they are employed and meeting the requirements of that employment. Despite many students having work experience, it is quite likely that the workplaces where they will find employment will be different from those where they have had work experience. So, there will be a need to adapt and translate their occupational knowledge about, procedures for and dispositions to that work situation; that is, adapting what they know, can do and value to the specific requirements of the circumstances of practice.

Secondly, when employed, graduates will need to be able to respond to new challenges and circumstances and to the growing expectations of being more experienced workers. The findings from the Programme of International Assessment of

Adult Competence consistently indicate that across the countries where the survey has been administered, workers of all kinds and classifications are engaging in routine and non-routine problem-solving in their work on a regular basis, with the former almost daily and the latter often weekly (Organisation for Economic Co-operation and Development [OECD], 2013). This means that they are needing to constantly deploy and extend their knowledge to complete work tasks and, in doing so, transform their knowledge when engaging in problem-solving (Anderson, 1993; Shuell, 1990). So, workers' ability to adapt what they know, can do and value to changing circumstances of work is central to their ongoing employability as workplace and occupational requirements change.

Thirdly, across working life, opportunities for advancement or more broadly applying skills also require adaptability. Both forms of advancement require workers to adapt what they know, can do and value to different circumstances and tasks. Across working life, it seems that this kind of learning is more often mediated by individuals themselves rather than through a reliance on others (OECD, 2013) or on educational programmes or provisions that may serve some purpose here. However, ultimately, it is individuals' ability to adapt to new circumstances and tasks that are necessary for extending employability in the forms of advancement or extending the scope of occupational practices.

Fourthly, across working life, that kind of extension of occupational knowledge can also include changing occupations. This occurs for many people as their personal needs, preferences or work situations change. It is in these situations that adaptability—that can extend to individuals' sense of self as a worker, the kind of capacities they have relied upon previously, and their standing in the community—is required when they adapt what they know, can do and value to a new occupation. Hence, to succeed in these transitions, maintain a positive sense of self, develop new capacities and engage in different work communities all require being adaptive. Importantly, adults with work–life experiences often possess a range of capacities that permit them to move across different occupations, by being adaptable.

What is evident here is that employability is not just restricted to being able to secure employment. Instead, it is central to effectively sustaining employability across working life: in meeting the challenges in the transition to employment, responding to new challenges and expectations, securing advancement and/or broadening areas of occupational competence and when needing or wanting to change the occupation in which one works. Across these dimensions of employability in lengthening working lives is the salience of developing the disposition and capacities to be adaptable, all of which have specific implications for WIL and WIE.

Work-Integrated Education and Work-Integrated Learning

It follows from the above that educational provisions need to accommodate not only occupational practice having canonical and situational requirements, but also learners being engaged effortfully and intentionally. More than what is afforded students are

the bases of their experiences when the curriculum is enacted, either in the educational or workplace setting, and how they come to reconcile these experiences and construct understandings, procedural capacities (i.e. to achieve goals), and dispositions associated with that practice. In these circumstances, it is helpful to distinguish between WIE and WIL. All too often the educational discourse has confused and conflated distinct concepts. So, to be clear, 'education' refers to provision of experiences, usually for intended purposes. Most educational experiences, in both educational institutions and work settings, are shaped by some form of intentions; that is, the intended curriculum (i.e. the sequencing, organising and intended outcomes of those experiences). In educational institutions, these are usually formalised by syllabuses, course outlines and the like. In workplaces, there are norms and practices about the progression of tasks in which novices and newcomers can engage. These arrangements arise from human society and are what is referred to as institutional facts (Searle, 1995). In contrast, learning comprises change in individuals arising from experiences. This is something people do; how they respond (i.e. learn) from those experiences is individually mediated—it is a personal fact (Billett, 2009a). There can be no guarantee that what is intended to be learnt through the educational experience will be learnt (Marsh, 2004). Individuals will come to construe and construct knowledge from what they experience in person-particular ways depending upon their readiness (i.e. what they know, can do and value), their interest and their ability to engage. Therefore, when moving beyond education as transmission, and particularly in circumstances such as students' workplace experiences where learner engagement, agency and interdependence are paramount, it is necessary to make these distinctions. They are salient to the projects of education and learning and both are important for a consideration of promoting employability and adaptability. These concepts are also aligned with the sociocultural project. That is, what is afforded by social institutions (i.e. educational institutions, workplaces), in the form of the intended and enacted curriculum, on the one hand, and how students come to experience, construe and construct what is afforded them on the other (Billett, 2006). Indeed, this duality presses for a consideration not only of what is afforded students, but how they come to learn through and from them.

In the context of higher educational reforms such as those associated with enhancing graduate employability, there is a risk that the focus will be on institutional arrangements as vehicles of reform. Instead, it is important that students' learning is privileged and considered on its own terms and precepts, not as a taken-for-granted outcome of the implementation of educational experiences. So, to briefly elaborate on these differences:

Work-integrated education—It comprises deliberate organisation, provision and integration of experiences from which particular kinds of learning are intended and includes efforts by educators to augment those experiences—institutional facts (Searle, 1995). It encompasses much of the intended and enacted curriculum and pedagogic practices supporting students' learning and deliberate attempts to integrate experiences in work and through educational programmes.

Work-integrated learning—It is personal processes of change (i.e. learning) through experiencing (i.e. construal and construction of experiences), which comprises the

'experienced curriculum', including reconciling experiences across education and workplace settings—personal facts.

These distinctions have implications for key concepts for educational and learning, and here, for the development of employability. In Table 2.1, these differences are presented in terms of readiness, curriculum, integration, intentions, outcomes and mediation or means. For each of these concepts, there are distinct differences in their meaning for WIL and WIE.

From Table 2.1, WIL and WIE can both be seen as salient concepts. Both are important for considering how employability might be generated, the role of adaptability and considerations of educational experiences, and how they might be enacted (i.e. intended and enacted curriculum). Table 2.1 also emphasises perhaps the most important concept, curriculum—the experienced curriculum (i.e. how students construe and construct knowledge from what they experience). For instance, the organisation, sequencing and enactment of student experiences in and through both higher education and workplace settings stand as key educational considerations for WIL, on the one hand. Yet, on the other hand, understanding of the time jealous

Table 2.1 Distinctions in meaning of key concepts across WIL and WIE

Concept	Meaning within work-integrated learning	Meaning within work-integrated education
Readiness	The level and kind of individuals' knowledge that mediates how they engage with experiences and learn from them	The awareness, understanding and capacities that educators and employers have to provide effective learning experiences for students
Curriculum	Something that is experienced by the learner dependent upon their earlier experiences and what they know, can do and value	Something to be identified, planned, organised, enacted and evaluated to achieve specific kinds of purposes
Integration	Individuals' integration of experience arises through their reconciliation	The provision of experiences in both kinds of settings and deliberate attempts to integrate those experiences
Intentions	To achieve personal goals in completing courses and programmes, graduating, and securing employment and progression	To achieve the stated educational outcomes of the programme and to meet occupational requirements and professional registration
Outcomes	Developing the kinds of capacities required for effective occupational practice and sustained employability in chosen occupation	Successful graduations and graduate placements
Mediational means	Individuals' ways of knowing; means construing and constructing knowledge based upon what they know, can do and value: their readiness	The provision of experiences and augmentation of those experiences through teaching and other pedagogic means

students, who engage in and mediate what these experiences provide, is central to a consideration of WIE. All this leads now to a consideration of how, together, these two concepts can be used to enhance securing graduate employability. Consistent with what has been proposed above, there is a need to consider how the provision of educational experiences can be organised and enacted, and then engaged with effectively by students.

Aligning Work-Integrated Education to Promote Employability Through Work-Integrated Learning

As a means of capturing how to progress with WIE to promote employability through WIL, three concepts foreshadowed earlier are used. These concepts are *Foundations of occupational practice*, *Manifestations of occupational practice* and *Adaptations to practice.* The foundations of practice comprise the canonical knowledge of the occupations that students are required to learn: the canonical conceptual, procedural and dispositional knowledge required to practise the occupation. As noted, these are the capacities usually captured in occupational standards, professional requirements and national curricula. The canonical concepts are those required to understand, form goals, decide amongst actions and know how to proceed in an occupational practice. The canonical procedures are those that are required to achieve the occupational goals, comprising both specific procedural skills and strategic capacities. The canonical dispositions are those values and dispositions that are central to the occupation. All of these are elaborated elsewhere (Billett et al., 2018). The manifestations of practice comprise the situationally shaped sets of understandings, practices and values of an occupational practice being enacted in a specific work setting. These considerations acknowledge that versions of canonical knowledge will likely be required to meet the occupational performance requirements in different work settings, and for situationally derived purposes. The work of nurses will, for instance, differ across wards in a major critical care hospital, vary from the work of those in small regional hospitals or aged-care facilities, and be different again for nurses who work in remote communities, mine sites or in military activities. It is these manifestations that will comprise versions of the concepts, procedures and dispositions. However, although these foundations and manifestations exist as institutional facts (i.e. generated by the social world; Searle, 1995), the adaptations to practice are something engaged with, constructed and conducted by individuals (i.e. personal facts). Hence, beyond addressing both the canonical and the situational educational requirements, there is a need also to focus on personal attributes and capacities associated with adaptability as defined above, and as emphasised within this sociocultural project. Of course, development of adaptability needs to be an element of the intended and enacted curriculum as well as a quality generated by students' own engagement. So, as a way of progressing, in the following sections consideration is given to how foundational knowledge, as variations manifested in a specific set of work requirements

and this kind of adaptation, can best be realised through WIE through consideration of curriculum, pedagogic and personal practices.

Curriculum Practices

The educational worth of engaging students in practicum or workplace experiences is in directly experiencing and construing authentic instances of the occupational practice being enacted and in their construction of knowledge (Billett, 2009b). It is now almost commonplace to have workplace experiences as an element of higher education programmes, variously referred to as practicums, clinical experiences or work experiences. These experiences typically involve students spending time in workplaces and, by degree, engaging in activities associated with their field of study. What they experience in these placements comprises a manifestation of practice: how the occupation is practised and how knowledge is utilised in a specific work practice or workplace setting. Hence, students will engage in a version or variation of how occupational knowledge is being used. Therefore, educational processes are required to provide students with opportunities to understand the bases of those variations; that is, the different means of achieving particular goals of those workplaces and the kinds of values inherent in achieving those goals. Moreover, the enactment of skilled activity in undertaking tasks, even in the same environment, inherently has variable elements associated with it.

> … all forms of skill expertly carried out possess an outstanding characteristic of rapid adaptation ... so what is called the same operation is now done in one way and now in another, but each way is as we say "fitted to the occasion." (Scribner, 1992, p. 105)

The salience of this proposition is that students need to understand that (a) there are variations in the manifestation of occupational practice, (b) there are often situationally specific reasons for such variations given the activities of the workplace, and (c) these goals and processes offer instances of manifestations of practice. Hence, the provision of these experiences in the workplace and educational setting can make accessible to learners (i.e. students) something of the array of possibilities that they might encounter upon graduation, when first employed (i.e. a specific manifestation of practice). This provides a conceptual and procedural platform for students to accommodate variation of the canonical occupational requirements (foundations of practice) and to recognise that it is to these kinds of circumstances they need to adapt (adaptation to practice). So, these circumstances also help generate grounded understandings, procedures and dispositions of what constitutes the foundational or canonical knowledge. This is because it is only in specific circumstances that students come to encounter the manifestation of occupation in action, and so their construction of canonical occupational knowledge in and through work placement will arise from how they reconcile those experiences (adaptation to practice) provided through their higher education programme.

It is, therefore, important to acknowledge that when students access sets of work experiences, they are engaging with one particular variation (i.e. manifestation of practice). Consequently, the process of developing canonical conceptions, procedures and dispositions inevitably progresses from the specific and concrete to the general and abstract (Scribner, 1992). Yet, conventional thinking about education is that it occurs the other way around. Indeed, the organisation of educational experiences (i.e. enacted curriculum) is often premised upon the basis of students only engaging in work experiences once they develop the foundational knowledge of the occupation. So, there is a need for educational processes to accommodate and support this adaptation. Scribner (1992, p. 105) suggests that such adaptation proceeds by the 'assimilation of specific knowledge about the *objects* and *symbols* the setting affords, and the *actions* the work tasks require'. This array of situational contributions, including clues and cues, is important for cognition. As Donald (1991) reminds us, human progress has not come just from having a larger brain than other species, but from an ability to represent our experiences cognitively, and these representative apparatuses are developed through human experience, and themselves assist in making sense of what is experienced (Donald, 1991). Yet, if the specific purposes, procedures and approaches adopted in these workplaces can be understood, the bases for adaptability are also enhanced. That is, these variations open up repertoires of goals, procedures and approaches that take students beyond what they might take from initial or just one set of experiences.

All this suggests the importance of the curriculum arrangements (i.e. pathways and kinds of experiences) allowing students to have at least one, or preferably multiple experiences of work practices, even vicariously, and then having the opportunity to share, compare and contrast these experiences with peers. Such processes can extend manifestations of practice to foundations of practice, and in doing so can generate adaptations of practice. Given the difficulties of accessing workplaces and practice settings, and for optimum periods of time, not all the experiences will be direct. However, through processes of sharing and comparing, vicariously, a range of experiences can be accessed by students (Cardell & Bialocerkowski, 2019; Williams et al., 2019). Hence, the 'intended' curriculum will need to include students accessing these experiences and then to offer educational processes that can assist students in understanding the particular requirements of the places in which they work (i.e. manifestations) and from these, identifying or teasing out what is common across the practice of the occupation (i.e. the foundations or canonical occupational knowledge). In terms of the design of WIE, a key issue is: at what point or stage in their programme of study do students engage in placements or practicums and then what arrangements are planned for sharing and comparing (Cooper et al., 2010)? This is a central curriculum question about the provision and ordering of experiences (Marsh, 2004) and goes back to the word's original meaning—the pathway to follow, the track to progress along. Often, the placement experiences are sequenced after students have learnt some foundational knowledge from their university-based experiences, so that they have the capacity to apply what they have learnt in the work situation (i.e. a level of readiness to engage in work activities). However, in other circumstances, the engagement in authentic work activities commences simultaneously with the

course and is a feature across the course, with students engaging on a regular basis in work placements. There are also circumstances in which students are immersed in the occupational practice at the commencement of their enrolment, and then attend classes and undertake tasks organised by the university. So, there are various models of structuring the experiences that comprise a higher education programme and at what point work placements are provided and for what purpose (Cooper et al., 2010).

Another important consideration is how the work placement experiences are augmented; that is, what kinds of experiences are organised prior to students going onto placements, during placement, and then on the completion of those experiences. There are clear benefits in preparing students for those experiences; then, as elaborated across a range of projects, augmenting those experiences once students have completed them offers a range of educational benefits (Billett, 2009b). Once students have had these kinds of experiences, they have basis for reflections on, and comparing and sharing them. As noted, there is much to suggest that these post-practicum interventions are helpful for extending and augmenting the students' experience, on its own terms through feedback (Noble et al., 2019), but also through allowing them to engage with others so that collectively, learning comes from a range of settings (Cardell & Bialocerkowski, 2019) and workplace requirements can be shared, compared and contrasted (Williams et al., 2019). However, this cannot happen unless it is structured into the programme of study and effectively supported and facilitated by higher education teachers (Rogers et al., 2019). A specific goal here is to engage students collectively in identifying what constitutes the occupational canonical knowledge (i.e. the conceptual, procedural and dispositional capacities required by all those who practice; Levett-Jones et al., 2019) and the particular qualities or variations of that knowledge that are required for the particular work setting or some form of specialisation (Williams et al., 2019). Developing these kinds of understandings can support adaptability, because they provide bases for utilising and drawing upon canonical (foundational) concepts in responding to situational requirements (adapting to practice).

So, as is discussed in the next section, consideration needs to be given to what pedagogic practices can assist the development of foundational practices, such as informed principles. Other sets of goals, such as addressing the need to adapt quickly and effectively (adaptability in practice), for example for paramedics, police, emergency services and military, are also required to be addressed pedagogically.

Pedagogic Practices

When appraising what kinds of pedagogic practices might support the development of students' adaptability in practice that will be required to sustain employability, it is worthwhile considering some broad notions about how such practices might progress. As noted, a key consideration for adaptability is guiding and pressing students into the kinds of thinking and acting required to secure that outcome. Adaptability cannot be easily taught; teachers can only provide the experiences that can

promote it and then engage students in them (Ericsson & Lehmann, 1996). So, there is a central consideration here about learning, rather than teaching. For instance, discovery approaches to developing adaptability in occupational preparation can be more effective than direct teaching (Stevenson, 1991). Positioning students as active learners, rather than as more passive recipients of knowledge, is likely to yield better outcomes in terms of adaptability. For instance, it was found that theory classes were more likely to be teacher-centred (Stevenson & McKavanagh, 1991), wherein students focussed on engaging with and following spoken word and printed text. That engagement leads to the development of procedural knowledge (how to achieve goals) and intellectual skills, such as evaluation and critical appraisal, but a lesser emphasis on active engagement. In contrast, it was noted that practical classes were characterised by a greater diversity of activity: They were more centred on individuals or small groups of students interacting with the teacher and with each other. The two approaches to instruction appeared to engage students in different modes of thinking and acting. The latter—what was occurring in practical classes—is the kind of approach that is likely to support the development of capacities required for being adaptable. It was also noted that the environment of the practical classes afforded equipment and other artefacts that provided premises for supporting the kinds of thinking and acting required for that cognition. So, aligned with providing these kinds of activities, teachers provide and engage students in tasks that promote higher-order thinking. Certainly, the locus of thinking is premised on interactions between learners and the physical and social situations in which they act. So, pedagogic considerations are not just about identifying and using teaching strategies in developing adaptability in practice.

When developing adaptability within the domain of occupational knowledge, engaging students in problem-solving tasks that press them into engaging with and utilising that knowledge seems helpful. Through responding to problem situations, scenarios, or even authentic work activities, the kind of learning that is generated is potentially different from that which is learnt through direct teaching or presentations (Prosser et al., 2003). A key concern here is for students, not just the teacher, to be engaged in the processes of thinking and acting when responding to problems, scenarios, challenges, projects, etc. That is, the students are needing to actively engage with the knowledge, appraise its importance, worth and applicability and then have the opportunity to articulate and have others share their respective approaches and insights. Students' creation of visual narratives has been proposed as a way of achieving these outcomes (Bennett, 2016; Newton & Butler, 2019). The selection of instructional approaches is important but needs to commence with student readiness (Ausubel et al., 1968). When engaging with new activities, particularly demanding ones, students might encounter overloads and unhelpful dissonance, and this can extend to how they identify with their preferred occupation (Jackson, 2019). Here is where guidance might be provided in the form of assisting students by breaking down the tasks or problem into a series of sub-elements or sub-goals to assist them work through engaging and responding to these tasks (Royer et al., 2005). Yet, because these activities are effortful and demanding, identifying and using tasks that engage students' interest and press them into effortful higher-order thinking and acting seems important.

This is not to say that the teachers' role is diminished: rather, there is a change in focus from a reliance on didactic teaching, to assist students in accessing the kinds of knowledge that are not easily experienced and constructed (i.e. conceptual and symbolic knowledge). It might be helpful to use instructional strategies such as stories, analogies, narratives, explanations and illustrations as means to make accessible to learners, knowledge that they cannot directly experience themselves (Bennett, 2016; Cardell & Bialocerkowski, 2019). Sometimes, these forms of conceptual and symbolic knowledge are particularly important because they can provide a basis for adapting knowledge from specific circumstances and situations to others. Another basis for adaptability that pedagogic practices can support is assisting students to develop informed principles and practices; that is, principles of practice can be used and adapted to specific work requirements and situations. The use of these dates from Plato's time (Lodge, 1947) and exists in a wide range of occupations including medicine (Sinclair, 1997), nursing (Cook-Gumperez & Hanna, 1997), law, through to occupations where constant adaptation is essential, such as designing clothes (Caruso et al., 2019) or buildings, or in construction and engineering. They offer bases for being able to understand and adapt. In cooking, for instance, the size and thickness of cuts of vegetables and meat determine how quickly they cook. For example, many Asian cuisines evolved from needing to cook food quickly, not requiring too much fuel to do so. Hence, the use of woks, and vegetables cut finely. Similarly, with curries from India, the combination of spices performs a number of purposes—providing aroma and flavour, preserving, and aiding digestion. Yet, the combination of spices and the medium through which they are cooked (e.g. oil, ghee, mustard seed, palm oil) are linked to the region from which the dish originated. Hence, the aromatic, preservative and aid to digestion combination represent what is available in that area or the established preference for that set of spices and herbs. Similarly, with something such as clothing design or architecture, there are sets of informed principles that allow the design of garments and of buildings to be based upon sets of core principles. These have developed over time and are informed by utility in practice, and explanatory power of concepts (i.e. their ability to explain). Once these kinds of principles and practices are understood, they can be adapted to circumstances other than those in which they were initially learnt (i.e. adaptations to practice).

As indicated in reference to the curriculum considerations, opportunities for students to share, compare and contrast their experiences and identify how the occupation is practised in the particular circumstances and why that is the case, can be used to provide strong foundations for adaptable practice (Forde & Meadows, 2011). For instance, the range and kind of tasks that nurses do in major teaching hospitals, as opposed to regional healthcare centres or remote community hospitals, allow them to understand how the use of foundational occupational knowledge can differ across circumstances of practice (Newton & Butler, 2019). As noted above, one way this can occur in WIE is in the post-practicum period. It is in those circumstances that students can vicariously experience a range of ways in which the occupation is practised (Billett et al., 2019).

So, there are strategies educators can use to promote adaptability (adaptation to practice): prior to students engaging in their practicums, during them and then

afterwards. Prior to students engaging in work placements, they might be encouraged to understand more about the workplace or work setting in which their placement will occur (Newton et al., 2011), what happens there, and how this might be different from other instances of occupational practice. This then gives students some framing so that when they have that experience, they are in some ways ready, but also have organised cognitive structures to make the most of what they encounter and how they construe and construct knowledge from those encounters. The key qualities here are guiding students and preparing them, initiating and engaging them in thinking and acting in ways that are focused and likely to be generative of the kinds of knowledge they need to learn, because of the experiences they are participating in and the thinking and acting processes they are adopting are becoming more akin to those of a practitioner than a student.

These pedagogic processes can be helpful in developing the capacities that permit the development of adaptable occupational knowledge that is aligned with achieving the goals of employability. However, as foreshadowed, the key focus and bases for selecting and enacting experiences are premised on the kinds of thinking and acting that are not only utilising students' knowledge, but are also generative of it in ways that promote the prospect of it being adapted to other situations and circumstances. Yet, it is acknowledged that these processes of thinking are person dependent and able to be exercised equally. Individuals are more or less capable of critical or creative thinking, and different situations are more or less conducive to learning and thinking (Greeno, 1989). In this way, just as modalities of teaching might change to accommodate learner readiness, here guidance, likewise, needs to be appropriate for students' level of readiness. Yet, sitting within this is the importance of student initiation, effortful engagement and critical appraisal of what is being construed and constructed; that is, ultimately, this learning is mediated by individuals' personal practices and epistemologies. The sociocultural perspective presses for a consideration not only of what is afforded individuals and how they come to engage with them, but also the person particular ways in which individuals reconcile those experiences. Hence, it is necessary to consider personal practices and epistemologies.

Personal Practices and Epistemologies

With any project of education, there are always intentions for what students should learn, and curriculum and pedagogic processes directed towards those ends. However, ultimately, the degree by which these intentions are fulfilled, even when there is very strong alignment between those intentions and what is enacted, depends on the personal practices, subjectivities and epistemologies of individuals who engage with them (Billett, 2015; Jackson, 2016). There can be no certainty or guarantees that what is intended to be learnt, will indeed be learnt. This uncertainty is a product of, on the one hand, the degree to which it is experienced by the learner and how they come to make sense of that experience: the process of experiencing. That process is premised upon their personal epistemologies: what individuals know, can do and value. This

includes their readiness to progress. These epistemologies are important for both WIL and WIE (Billett, 2015). For WIL, they are central to students' learning and adaptability (i.e. problem-solving and innovation) and their reconciliation of what they experience in workplaces with the content and intents of their courses. That is, they are central to the process of cognition, of which learning is a part. For WIE, they are central to its enactment and experiencing, as much of this must be mediated by students themselves, not their teachers. A key concern is that higher education students are becoming increasingly time jealous as the demands upon their time for study, work experience, paid employment, and pursuing social and cultural interests are perhaps more intense now than in earlier times (Billett & Sweet, 2015). Whilst it is often stated that students are time poor (i.e. they lack time), perhaps it is more appropriate to suggest that these students are time precious or time jealous. That is, given that they have so many demands upon their time and that these demands overlap, they will make strategic decisions about how they direct their time, energy and efforts (Billett, 2015). Across a range of projects on higher education students' practice-based learning, it was found that students' engagement was shaped by their time jealousy (Billett, 2011; Billett et al., 2019). Time jealousy is a key determinant of the basis by which practicum experiences can be fully embraced, of students' consideration and appraisal of those experiences, and also of how and what they want to do in terms of sharing, comparing and otherwise engaging with peers.

Yet, it is important here to include a consideration of teachers' personal epistemologies as these play a role in how they engage, prioritise and select experiences and enact WIE and how they come to integrate the workplace experience within their own courses. It is also important to remember that academics have also become time jealous. Certainly, the evidence suggests that tertiary educators need to find ways of supporting the development of students to be proactive in learning and managing their time jealousy as leaners. An important consideration is providing experiences that students judge to be relevant, worthwhile and engaging. For instance, in working with medical students, the use of activities seems essential for their progression, combined with opportunities to engage with peers in small groups to discuss their practicums. Harrison et al. (2019) utilised these processes in weekly meetings with students, providing them with an activity that they had to attend for that course progression, but also providing opportunities for them to engage in peer discussions that were relatively unsupervised. Against expectations, these sessions were well attended, and the engagement was perceived to be at a very high level. In a separate initiative, Harrison et al. (2019) also provided clinical cases that students had to respond to through a web-based provision. Interestingly, although there was a specific requirement to address at least one case, many of the medical students commented on and evaluated more than the minimum. This indicated that they found these kinds of activities important. The sharing of experiences by medical students was facilitated through weekly meetings that allowed students to engage with peers who were going through a range of clinical rotations (i.e. placements in different clinical areas). The students found this particularly helpful because they were assessed in their knowledge of all clinical areas, although their experiences across these different areas straddle an entire year. Here, demonstrably, there are prospects for critical and constructive

engagement through such activities and the development of manifestations of practice, foundations of practice and adaptation to practice. However, all of this is only likely to occur when students engage in the effortful processes of learning through such activities. One way associated with this engagement is to have activities that capture and articulate the sense of vocation (Dewey, 1916) that students have with their field of study. It seems that when students' subjectivity or sense of self is richly associated with a particular field of study (Jackson, 2016, 2019), they are likely to engage in it effortfully to achieve those outcomes. That is, their sense of self as an emerging occupational practitioner is as much aligned with that sense of vocation.

Educational activities that permit students to hear, see, or engage with different instances of practice and to understand their purposes, processes and utilities are likely to engender adaptation to practice. Importantly, beyond having experiences such as engaging in problems in the workplace, project work within the university, or post-practicum activities, there needs to be the opportunity for students to share and articulate what was distinct about these experiences and how what they are experiencing was, by degree, a manifestation of highly situated practices (manifestation of practice) or aligned with the canonical knowledge of the occupation (foundations of practice). It is the negotiations between these two that provide the basis for adaptability when faced with novel challenges (adaptation to practice). However, it is possible, as with Harrison et al. (2019), that whilst these processes promote students' engaging in thinking and acting, it will be important to have their teachers guiding them with well-considered, appropriate and engaging activities.

Conclusion

Graduate employability is a key goal for contemporary higher education. That employability is more than securing employment beyond graduation: it also extends to retaining employment through developing occupational capacities in ways that respond effectively to emerging challenges, that assist individuals to seek advancement and/or more broadly use their skills as work circumstances and challenges change, and also, potentially, that assist them to move from one occupation or field to another. Beyond the initial transition from tertiary education to employment (i.e. 'job readiness' or the ability to apply occupational knowledge and skills within specific work circumstances), central to all these concepts of employability is the ability to be adaptable (i.e. adaptation to practice): to possess domain-specific occupational knowledge (i.e. foundations of practice), yet to be able to adapt it to respond to novel challenges and new tasks. Consequently, all of this positions WIE as being able to develop canonical occupational knowledge, with capacities to adapt to situational work requirements (manifestations of practice) and changes that arise within them through possessing broad work–life capacities, including agency, that is, to assist students to engage effectively and critically in WIL. WIE also needs to develop students' habits and practices to engage in continous learning and innovation in their working life to secure employability. In this way, WIE can realise societal as well

as personal outcomes through WIL with the promotion and securing of employability. All of this is illuminated and advanced through sociocultural theorising which emphasises the need to account for the experiences afforded individuals, how they come to engage with them and the relations between what is afforded and how individuals engage (Billett, 2006). It is this kind of theoretical explanation that assists in advancing responses to assist students achieve their employability goals.

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Chapter 3
Connecting Graduate Employability and Workplace: A Sociocultural Perspective

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Abstract The social and cultural dimensions of professional learning in workplace contexts may nurture individual's involvement and belongingness within the community. This chapter proposes a sociocultural perspective to understand the social and cultural aspects of a workplace. Such sociocultural approach is invaluable as most of the time, our graduates do have the qualifications and knowledge, but they lack the ability to integrate and interact with the social process. A sociocultural perspective allows us to understand the constraints and dynamics of a working context, whereby individuals may find struggle at work and feel stressed when they face challenges or setbacks. The present chapter provides insights of a sociocultural perspective on the graduate employability and workplace of individuals. This proposed approach aims to develop individual ability to survive and achieve in the future workplace, as well as it highlights the importance of understanding the social and reflexive process amongst individuals. This chapter makes a theoretical contribution, in that it elaborates sociocultural aspects of a workplace and provides insights into graduate employability by integrating individual, interactional and sociocultural practices. It thereby offers the possible and future directions of sociocultural research in the context of workplace community and lifelong employability.

Introduction

Based on sociocultural theory, there is a social context that is needed for learning whereby individuals interact with one another and make use of tools. Types of tools include concept, language and symbols in a natural way (Hall, 2007). Individualistic skills are associated with socially endorsed practices that can be considered as "socially distributed mental representations of particular knowledge, norms, or behaviours" (Benbow & Hora, 2018, p. 488). In addition, a mediator tool like language is essential for social connections and reflexive process. Language

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proficiency is essential for career development and networking opportunities (Van Riemsdijk & Basford, 2021).

An innovative approach to understand the topic of employability and workplace is to apply the sociocultural lens. By considering the social and cultural elements within a learning context, the relationship with the world of work is more saliently connected and understood. An example of such relationship is the sharing of social and cultural values in an organisation that may serve as an important place for a collective identity process of sharing tales of success and failure, giving advice as well as validating one another's feelings.

Connecting graduate employability and workplace through sociocultural lens is still in infancy. This is an under-researched area that could contribute greatly to graduate employability and ongoing social learning in a workplace. This chapter is timely to highlight the key areas of sociocultural theory through a specific community such as in a workplace, in association with social and cultural practices, as well as socially distributed knowledge. Socially distributed knowledge refers to mental representations of particular knowledge, norms or rules, and behaviour (Strauss & Quinn, 1997). Furthermore, cultural practices provide insights into the way individual experiences are internalised, and these cultural meanings are usually not fixed or limited.

Using a sociocultural lens will provide novel perspectives into individual experiences at the workplace, thereby enhancing a collective identity and emotional competence of individuals. The key contribution of this chapter is presenting a sociocultural approach to understand the importance of graduate employability and workplace practice. In a broader perspective, there are possibilities for capturing the individual experiences within the context and the organisational context. The present chapter makes a theoretical contribution, in that it elaborates sociocultural aspects of a workplace and provides insights into graduate employability by integrating individual, interactional and sociocultural practices.

A Sociocultural Perspective

Learning is embedded in social and cultural contexts, which reflects individual engagement, interpretation and construction of practices, shaped by individual intentions and distinct experiences (Billett et al., 2005). Sociocultural milieu may be a by-product of engagement in daily activities, routines or everyday practices at work. Besides individual agency, learning is also mediated by tools, objects or ideas, resulting in distinct interpretations and internalisations of the world or construction of cultural practices (Hopwood, 2010). For instance, a mediator tool may be language or conceptual artefact that reflects past social and cultural experience but may also be reshaped or created in the present as part of practice.

Sociocultural theory places the social environment as the core of learning, whereby psychological tools that include language, signs and symbols will mediate one's learning during the process (Cole, 2001; Hatano & Wertsch, 2001; Vygotsky, 1978).

The most significant sociocultural tool is language (Hall, 2007). In relation to a working environment, the interactions with colleagues and texts are likely to be the mediators for one's learning in the workplace. For instance, a mediator tool is first seen externally as an "expert teaches the learner how to use the tool, then internally as the learner begins to use the tool in performing other activities" (Hall, 2007, p. 96). During the internalisation process, the tool may be modified and transformed the learner's thought process. The social environment and its mediators may influence the learners' thinking process and their expression of thoughts.

From a sociocultural perspective, the type of tools and mediators are essential (Van Riemsdijk & Basford, 2021). The context of learning is necessary for learners to interact with one another and use the new tools. In this manner, the learning environment or workplace must be authentic. Specifically, individuals in the work context would use the types of tools such as language and symbols in a natural way. Within a social environment, tackling a task or solving a problem may involve the interactions of individuals and use of tools. An authentic task is dependent on the individuals' levels that may be considered as simple or complex.

A sociocultural perspective is about learning as a social process that can happen in an organisation or a workplace community. For instance, Fleming and Haigh (2018) found university students perceived they learnt through participation in authentic workplace activities, as well as through social interactions and engagements associated with these activities of their workplace community. Another aspect of the sociocultural theory is the communities of practice (CoPs). CoPs are mainly associated with social learning theory first proposed by Lave and Wenger (1991). CoPs are also formulated as part of situated learning theory (Lave & Wenger, 1991; Wenger, 1998).

To operationalise CoPs in the context of a workplace is a collection of people within an organisation having a mutual engagement or shared repertoire. CoPs can change over time, forming a trajectory through a social landscape (Lundberg & Ness, 2020). Through this social landscape, individuals are likely to build their professional identity and manage it through engagement and alignment, contributing to the social knowledge embedded in the CoPs. Through CoPs, individuals working in a social environment may build their career identities and manage their identity trajectories. CoPs may provide insights into how individuals learn at work with a focus on patterns of continuity or lifelong learning. Learners are shaped into their identities (i.e. embodiment) with respect to their differences in what and how they learn (Fuller et al., 2005).

In addition, the community of practice (CoP) views individual language socialisation as part of the process of seeking professional competence as new members of a community (Chan, 2021). Adopting the notion of CoP may provide novel insights into graduates' language socialisation when they are transiting from the university to a new workplace, understanding how these graduates learn workplace discursive practices as novice professionals. The discourse and practices within a university's community are likely to be different from those in the workplace. CoP is likely an approach to nurture graduates' professional competence and communication in the process of socialisation as new members of a community (e.g. in a new workplace).

As abovementioned, language is primarily the tool of mediation and socialisation process. The process of language socialisation requires the learning of a community's discourse and practices (Chan, 2021). From a sociocultural perspective, practical insights into how graduates respond to a new workplace context can help devise appropriate induction strategies to promote socialisation within an organisation. The sociocultural lens may offer insights into process of imbibing new cultural material that may indirectly contradict individual ingrained values and beliefs in the working environment (Sandeep & Ravishankar, 2018).

Graduate Employability

Employability is known as "skills, knowledge, and personal attributes a person should possess to become employed" (Lundberg & Ness, 2020, p. 1). Graduate employability is viewed as a set of attributes that graduates will gain employment and be successful in their chosen occupations (Fleming & Haigh, 2017; Yorke, 2006). Attributes are defined as the skills, qualities and values that are intended to be acquired by individuals, which consequently shape the contribution they could make to their profession (Nagarajan & Edwards, 2014). Recent research showed that employability benefits not only the graduates themselves, but also the workforce, the community and the economy (e.g. Ng et al., 2022; Orsmond et al., 2021).

In a recent research study, Orsmond et al. (2021) investigated whether undergraduates develop employability practices within their university's CoP that might be translated into their workplace communities upon their entry to employment. Their findings revealed that university students develop employability practices and identities when involved in the participatory role within the university and they could translate these practices and identities once they have transitioned into the workplace. Another aspect of CoP is the negotiation of changes to existing practices and their identity trajectories may be modified accordingly to these changes. This suggests that students who develop employability practices and identities at university could translate and modify them through workplace practices (Orsmond et al., 2021). In summary, CoPs contribute to graduate employability and professional identity by developing their "know-what" and "know-how" skills.

There is a need to develop graduate employability for today's globalised world (Pham & Jackson, 2020). Graduate employability is considered one of the main goals of higher education to make students employable. Besides knowledge and skills, employability is also about personal attributes a graduate should possess to become employed and stay employable. Lundberg and Ness (2020) examined graduate employability using sociocultural theory as an analytical framework to shed light on how university students develop their professional identity and ability to imagine their future work. Hence, graduate employability could be seen as a pre-professional identity or career identity, by connecting what the students do and develop their identity formation that is central to future profession or career.

Sociocultural Aspects of a Workplace

Understanding sociocultural aspects of a workplace may help employers or management personnel to factor them at work for employees to develop their professional identity and a sense of achievement, which in turn beneficial to the employer (Mensah, 2019). In doing so, employers gain important understandings and insights that allow them to take on the job responsibility and able to solve problems at work (Billett, 1998). In addition, the quality of interactions among individuals in the workplace is important. If the mentor merely demonstrates to the new worker without an understanding or expectation, this transfer of knowledge is likely to be limited and the result may be weak. Transfer of knowledge is essential for newly hired graduates to access to tasks that require knowledge and problem-solving.

Workplaces are good examples of CoPs (Billett, 1998). Within a workplace, there are norms and practices to be realised through the application of knowledge and collaborative problem-solving takes place. In this manner, a sociocultural practice exists in a workplace and it is enacted in a CoP, among individuals, activity and relationship with other CoPs. Through a sociocultural lens, the graduate's experience can be conceptualised as a CoP. When graduates situate themselves alongside with their colleagues at the workplace, they engage in work-related activities and involve in knowledge building and interactions within the workplace community. It is thereby through such social interactions and participation in work activities, our graduates gradually begin to understand the desired characteristics of the community, which is known as the CoPs. This process of social interactions involved practices of critical reflection and identified exploration that contribute to framing individual professional identity (Jackson, 2017).

In a recent study on work-integrated learning for university students, the features of the sociocultural environment of the workplace supported the outcomes of students' learning experiences, and acquisition of knowledge through non-formal engagements and interactions with the workplace community (Fleming & Haigh, 2018). The student's experience is also conceptualised as a practice within a community (Gherardi, 2009). Such findings suggest that a sociocultural view is important in supporting individual learning through participation in authentic workplace activities, as well as through social interactions within an organisational community. Four key features related to sociocultural view were authenticity, responsibility, professional and social interactions, as well as a sense of belonging. The use of a sociocultural lens reveals a connection between graduate employability and workplace, in which learning occurs through participation in authentic activities, as a social process. As reiterated by Billett (2009), the workplace is a place in which university students learn by acquiring the "know-how" knowledge, values and attitudes.

It is necessary to link the reflexive and social process as part of a student's experience, so that they learn to make sense of and engage with socially and culturally derived artefacts, language or behaviour as tools. Another example is co-workers and supervisors in a workplace may provide students with industry tools in a work-integrated learning environment. This is recognised as mediated learning or a process

of mediated action (Vygotsky, 1978). Using these mediated tools, graduates could access, make sense and acquire the socially and culturally derived knowledge within the organisation or workplace. The use of these tools enabled graduates to move from a novice or newcomer to a full member status of the workplace through legitimate peripheral participation (Johnston, 2016; Lave & Wenger, 1991). However, participation is peripheral to an extent that it provides an approximation of performance-ready competence and sufficient legitimacy to be treated as a potential full member who has a sense of how the community operates (Davis, 2006; Johnston, 2016). In this process of legitimate peripheral participation, newcomers at the workplace initially observe their peers and others' practice. Gradually, they take on an active role once they are ready for more complex activities or tasks (Cuddapah & Clayton, 2011). Besides being able to access the practice knowledge and take on more tasks, they also learn to read and adapt the culture, value and expectations of the community.

Sociocultural approaches to understanding the workplace context and employability may provide an alternative perspective of workforce development and lifelong learning. Especially in this coronavirus pandemic era, sociocultural perspectives could reveal insights into the CoPs and socially situated communities. This recognition of a socially situated workplace is likely to offer a fundamentally social and reflexive process amongst individuals. This sociocultural perspective relates to the concept of CoPs which involves the activity theory and social theory of learning (Engeström, 2003; Lave & Wenger, 1999).

The activity theory framework developed by Engeström (2000) is an approach to analyse changes in a system, whereby artefacts or tools are collectively created and used by individuals to work on a task or problem to achieve a desired outcome. Based on this perspective, employees are considered as members of the workforce and learners who could develop their personal effectiveness and lifelong employability at work. For instance, transferable skills development may be seen from an activity theory lens as the object of activity system, thereby developing individual personal effectiveness and employability (Deignan, 2008; Deignan & Brown, 2016). According to Deignan (2008), activity theory perspective is used to examine transferable skills development, with the workforce as the object of the activity system. In this approach, fresh graduates or trainees whose competence is perceived as being potentially compromised by a skill deficit may be seen as problematic in the workplace community. Through transferable skills development, we can understand the fresh graduates and trainees as a generalised learner with cultural motive to develop personal effectiveness and employability. Such sociocultural approach is likely to understand a learner's competence and cultural motive of addressing the need for training and learning in a workplace.

The sociocultural aspect of activity theory examines a set of human actions and connects the person to the social level (Engeström, 2000). One such example is seen in a workplace where graduates work in a team of supervisors or other employees of the organisation (Marie-Jeanne, 2020). Regardless of age and gender, they work towards a goal within a CoP. Within a sociocultural context, it is noted that a highly context-dependent activity achieves the purpose of a CoP (Cameron, 2019; Papen, 2005). A

highly context-dependent activity is associated with subjects (i.e. individuals working together) and tools that act with one another by building knowledge and interaction.

Within the sociocultural context of a workplace, employees interact with one another as they see their work contexts as a CoP in which they negotiate their relationships during the process of interaction. It is plausible that such social and cultural process may help individuals to develop and pursue their desired identities in the workplace. As stated by Wenger (2010), identities are defined as who individuals are, where they belong and what their experiences are. Social and cultural process also refers to a negotiated experience in which one experiences self through participation. Through participation and interaction, individual knowledge is then developed and expanded, building a sociocultural understanding of knowledge development (Lundberg & Ness, 2020).

The abovementioned social and cultural aspects are essential for more than just workplace conviviality, as the networking opportunities and CoPs facilitated by participation may be essential for career development and lifelong employability.

Benefits of a Sociocultural Perspective

The social and cultural dimensions of professional learning in workplace contexts may nurture individual's involvement and belongingness within the community. Such approach is invaluable as most of the time, our graduates do have the qualifications and knowledge. However, upon entering a new workplace, they may be thrown into the deep sea and grappled with the increasingly responsibilities for the roles they were given. In this retrospect, graduates should understand the sociocultural aspects of the workplace and its practices of the community, being able to access and be familiar with the environment. It is important too that the supervisors should be attuned to how these sociocultural aspects of the workplace may influence the new members of the community and enhance their career development. According to Fleming and Haigh (2018), graduates need to understand the sociocultural aspects and practices of the workplace community so that they could access and exchange knowledge effectively. Through meaningful interactions with the colleagues and supervisors, graduates situate themselves alongside and engage with one another, fostering a sense of belonging to the workplace community. In doing so, opportunities for graduates to involve with the practice of the workplace community, participate authentically and enhance their learning experience within the organisation are offered.

The sociocultural perspective of the workplace may offer some insights into emotional competence and awareness of emotions within an organisation. Since emotion is not just an internal state of an individual, it is also about the experience of participation within a social and cultural context. Sociocultural aspects of a workplace underline the interpersonal nature of emotions and intrapersonal emotions socially, culturally as well as situationally (Ikävalko et al., 2020; Synder et al., 2013).

Besides understanding daily interactions and practices in the workplace, the sociocultural approach can shed light on the emotions and emotional regulation of individuals. Synder et al. (2013) investigated the sociocultural perspective on the regulation of positive and negative emotion of individual's work. Their findings revealed that emotion is not just an internal state experienced by an individual, but it is also experienced, perceived and understood in particular social and cultural circumstances. This implies that emotions are socially, culturally and situationally communicated within daily practices, as well as applied to an individual's work at different levels. Emotions are also dynamic as a process of the continually changing states of its components and constantly changing individuals' meaningful experiences (Marinetti et al., 2011).

The sociocultural perspective postulates socially oriented views on emotions within an organisation and these emotional expressions are dependent on socially and culturally constituted guidelines. Another aspect of sociocultural theory is the study of emotions at a workplace. Emotions "are not seen as phenomena that exist only in the mind but rather as entities that structure social interaction and its consequences" (Ikävalko et al., 2020, p. 1486). Ikävalko and colleagues (2020) adopted the sociocultural lens on emotions at work. The study investigated emotional competence within interactions and workplace practices in relation to sociocultural aspects of emotions at work using an emotion-focused training intervention. This intervention study stressed on the importance of creating stronger relational bonds in relation to participation in team learning as well as supporting the development of emotional competence. Findings of this study suggest that the sociocultural perspective on the emotion intervention enhanced individual emotional competence and awareness of emotions, thus promoting positive effects in the workplace. The value of sociocultural perspective on emotion competence at work could lead to a better understanding of routines and daily practices within an organisation.

In summary, research on sociocultural model of workplace could inform workplace goals, norms and practices. At a workplace, learning occurs from participation in social practice, which benefits learning in the workplace as well as professional role and socialisation (Philibert et al., 2019). Through sociocultural lens, affordances that are critical to learning and professional socialisation in a workplace should consider workload, control over work and fairness, as well as work experiences.

Connection Between Graduate Employability and Workplace

The idea of graduate employability is to develop students' ability to strive and excel in the workplace upon completion of a university degree course. The extent of graduate employability may develop a wide community beyond the university context, by involving participation of interested stakeholders such as employers and government agencies. In this approach, university students may understand the importance of

graduate employability and transferable skills development prior to entering the new workplace.

Sociocultural lens may be an alternative perspective on enhancing lifelong learning and workforce development. The workplace has become a necessary sociocultural context and environment for continuing learning, promoting efficient learning professional development of graduates that connects to graduate employability (Verma et al., 2018). Contrasting sociocultural practices also promotes the development of differing abilities among graduates (WEF, 2017), which may enhance lifelong employability.

A sociocultural perspective on graduate employability and workplace is useful to accurately explain the flexibility of the work and versatile skills. Such a theoretical perspective is reminiscent to bridge the gap between graduate employability and workplace, considering that a work organisation functions as a CoP. A sociocultural lens is also important to bridge the structure and process of social and reflexive practices (Augustsson, 2016; Billett, 2008). Furthermore, a sociocultural approach is practical to explore the flexibility of the consequences of a task at work that requires individual employable skills such as adaptability and independence. The task that is part of this environment would be determined by the type of tasks individuals perform at their workplace. In a workplace, individuals will discuss and interact with one another in terms of knowledge creation and transformation. Because of a particular social and cultural practice, knowledge that is valued in one workplace may not be valued in another organisation (Billett, 1998). It is also possible that knowledge required for a vocational practice may evolve over time or transform in various ways.

One of the key goals of higher education is to make graduates employable. Lundberg and Ness (2020) used sociocultural theory as CoPs and the concept of imagination to increase the understanding of university students' expectations and ability to imagine their future work. Graduate employability is seen as an identity or a pre-professional identity, where the connection and understanding of a student's future profession is central. Identity is a continuous process where students reflect on their new experience and use it in their identity formation. It is important for students to be aware of their employment possibilities, why and what they are learning and how this experience would be beneficial for future workplace. Through sociocultural lens, students would understand how and where they belong, thereby interpreting their participation in the social world and developing a professional identity.

Future Directions

Conceptualising graduate employability and workplace as a sociocultural perspective is necessary. Thus far, there is no empirical study that examines the sociocultural perspective of graduate employability and workplace and its sociocultural process in the form of CoPs. With the increasing concern of retaining and sustaining workers at all ages, it is important to recognise their learning needs that are strongly influenced by

the sociocultural context (i.e. work context). Using the sociocultural lens to examine the individuals and work context may contribute to understanding employees as individuals, as well as the sociocultural contexts affecting them and their developmental needs. The social work environment should offer opportunities for individuals to develop their own identities, to express their thinking process, as well as to challenge the organisational policies and practices.

Linking graduate employability and sociocultural context is a novel approach to understand the dynamics of training and learning in a workplace. This approach brings up the contextual dynamics that may affect learners as individuals in how they learn, how they understand themselves as learners and how they reflect on what constitutes lifelong employability. Lifelong employability is increasingly important in the context of future workplaces. Understanding lifelong employability will help workers to cope with fast-changing job requirements, improve existing skills and develop new skills (Van der Heijde et al., 2018). Furthermore, workers can remain relevant, equip with the skills they need and improve their career prospects (Davis et al., 2019).

In relation to graduate employability, a sociocultural model acknowledges the significance of workplace context and culture, with peer collaboration and learning emphasised. Not just focusing on the young graduates at the start of their career, organisations should also take the initiatives to retain and sustain workers at all ages. In addition, individuals should rethink learning and career development as a lifelong process that constitutes to lifelong employability. From the sociocultural perspective, individual developmental needs that are likely influenced by work context may differ. Educators, career counsellors and even human resource professionals should inform the students about the practices and policies of positive attitude and equitable thought.

Employers prefer hiring graduates with work placement experience together with life experiences outside the domain of the curriculum (Orsmond et al., 2021). In this respect, employers are likely to seek graduates with participatory experiences in different types of CoPs. Hence, universities may consider providing exposures to different CoPs during the job placements or internship programmes.

Adapted from Ghosh (2014, p. 176), future directions may explore a specific action plan for consideration in the connection of graduate employability to social and cultural norms of a workplace. Suggestions are:

- To keep up with technology and make use of it.
- To make students think beyond university settings through simulations or exercises.
- To foresee the changing needs of organisations.
- To collaborate with industry for networking and understanding the emerging trends.
- To develop research and networking clusters through students' attempts.
- To emphasise CoPs through a sense of community, knowledge culture, interpersonal and group skills, and face-to-face interaction.
- To recognise and nurture employable skills (e.g. adaptability).

Future studies could be framed around the sociocultural model to improve organisational culture and relationships between cultural values. Positive outcomes via sociocultural lens may reflect a workplace context and culture that are apparent and visible. When the status of workplace context and culture are prioritised, collaboration and relationship building will improve as well.

The present chapter postulates the importance of sociocultural lens to understanding individual learning and professional identity, thereby providing an alternative perspective on lifelong learning and career development. At university level, teaching and learning can be treated as an activity that is socially situated involving CoPs. However, the knowledge acquired during the course of university may not be adequate for the future workplace. As such, it is important to understand the sociocultural aspects of a workplace, highlighting the concept of CoPs and how CoPs could help in fostering learning as a fundamentally social and reflexive process. No doubt, our professional identity and career development differ. It is this sociocultural lens that helps us to understand the relevance and importance of human social psychology per se. Being able to understand and reflect effectively is an approach to both activity theory and social theory of learning that involved CoPs.

Conclusion

This chapter provides insights of a sociocultural perspective on the graduate employability and workplace, allowing us to understand the constraints and dynamics of a working context. This approach may develop individual ability to survive and achieve in the workplace, by understanding the social and reflexive process amongst individuals. Recognising the importance of social and reflexive process, this chapter advocates the involvement of CoPs as a concrete example of human–social psychology in understanding the context of workplaces and reframing the standards of workplaces to better inform the policy of work practice. This CoP which is integral of both activity theory and social theory of learning offers the possibility of lifelong employability and career trajectory.

The contribution of this chapter is to advocate the sociocultural perspective of our university students, in order to prepare them for the expectations of a new workplace and provide a smooth transition from university to a new organisational community. It is important for students to know in advance in understanding and adapting to the culture and values of the workplace community. As a new member in the community, students interact socially and engage in knowledge of practice. In this way, they learn to construct knowledge and identity through reflections on these interactions. At university level, students should start to play an active role in socialisation, reflection and exploration. Over time, students who are exposed to the workplace community would naturally fit into the culture and frame their own professional identity.

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Chapter 4
Sustaining the Employability of Working-Age Adults: A Singapore Case Study

Anthony Leow and Stephen Billett

Abstract There is a growing emphasis, globally, on aligning tertiary education with graduate employability. Much of this effort is directed towards young people's transiting from schooling to paid work via university and vocational education programmes. Yet, less attention is paid to sustaining working-age adults' employability through educational provisions. As employability embraces sustaining employment and seeking advancement across working life, it comprises an important educational provision. Drawing on findings of an investigation of Singaporean tertiary education institutions' continuing education and training (CET) provisions, this chapter proposes how they might be effectively designed, developed and enacted. Adopting a sociocultural perspective, it comprised concurrent phases of interviews with CET graduates ($n = 180$) and employers ($n = 40$), a survey of working-age Singaporeans ($n = 860$) and focus groups with CET educators and administrators. From the findings, sets of principles for the design and enactment of CET programmes focused on accessibility and effectiveness are advanced. In conclusion, although informed by Singaporean tertiary education, the findings reported here have broader applicability in promoting their employability and implications for working-age adults' sense of self.

Education as a Social Leveller

Education has always been viewed as an effective catalyst for social mobility by equalising opportunities and enhancing human capabilities. This notion of education as the great social leveller has been indelibly imprinted in the collective consciousness of many countries across the world. However, this emancipatory conception of education as a panacea for eradicating inequality and actualising social mobility can

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be oversimplified, raising unrealistic expectations. This slippage occurs in that this is an ideology that is inextricably embedded in a neoliberal project of individualist policies of competition, effort, hard work and the alleged benefits that supposedly flow from aspiring towards a "more meritocratic" society (Hoskins & Barker, 2014). Increasingly, however, this assumption is being questioned and challenged. There is growing concern that education, in its current form, is unintentionally cultivating social stratification and inequity. The argument is that it provides a distinct and unfair advantage to those privileged to gain access to it. There are important messages here for higher education, especially in continuous education and training (CET), on how we need to rethink the individualist policy rhetoric and remodel education so that it can provide opportunities for as wide a population base as possible. Yet, to do so requires accounting for the intentionalities, capacities and interests of individuals (Malle et al., 2001), and the kinds of experiences that are provided for them and their prospects for achieving those outcomes through individual's engagement with them (Cole & Engestrom, 1997). This is the contribution that sociocultural theory makes in drawing our attention to the duality between historically and culturally derived social practices that comprise the experiences afforded individuals (Scribner, 1985), on the one hand, and how individuals engage with them, on the other. That is they are co-participatory (Billett, 2001). However, how these dualities are derived and enacted are shaped relationally by individuals and what they are afforded (Billett, 2006). It is this explanatory approach that is exercised here to illuminate the processes of engagement and change (i.e., learning) arising through engagement in CET. Globally, there is a growing concern about providing effective CET programmes to meet the needs of working-age adults. This concern is often directed to how these adults can (a) remain employable across their lengthening working lives, (b) contribute to their workplaces' continuity and development and (c) collectively address governmental goals of supporting a robust economic base and providing quality services (Organisation for Economic Co-operation and Development [OECD], 2006, 2010). This need for effective CET provisions to sustain working adults' employability has perhaps never been greater than during the era of the COVID-19 pandemic. As social distancing measures continue and with teaching and learning moving online, adult learners who lack ready access to a stable Internet connection and/or do not possess the digital literacy to engage effectively with the online lessons, face significant barriers to accessing and engaging in quality CET. While these challenges are not insurmountable, leading surveys such as the OECD Programme for the International Assessment of Adult Competencies (PIAAC; OECD, 2019) have demonstrated that adults with lower levels of education, lower paying jobs and lack of or insufficient employment are least likely to participate in adult education. The ongoing impact of the COVID-19 global pandemic will likely exacerbate and compound the learning barriers for these adult learners.

While many adults continue to work, the International Labour Organization estimates that around 80% of the global workforce are affected by workplace closures and that labour markets will likely suffer in both developed and developing countries (International Labour Organization, 2020). In response, many countries around the world have adopted counter-cyclical fiscal policies to fund stimulus packages

to support the unemployed and to increase expenditure in key areas such as health care, education and training (OECD, 2020). Each country's economic recovery is highly dependent on how well its workforce is prepared to meet the evolving needs of the changing labour market (Dikhtyar et al., 2021) and individuals' engagement with CET has shown to be strongly counter-cyclical (Dellas & Sakellaris, 2003). As highlighted by Dikhtyar et al. (2021) in their study on adult education and the impacts of the COVID-19 pandemic across ten developed countries (i.e., Sweden, Norway, the Netherlands, Germany, Italy, the UK, Australia, Singapore, Canada and the USA), there are increased investments in the upskilling, reskilling, or CET in the countries they studied that aim to expedite their economic recovery while concurrently improving re-employment prospects for middle- and low-skilled workers. In this regard, some governments have increased funding for CET, while others have provided financial support to employers for sending their employees for CET. In the case of Singapore, the government has adopted both approaches.

The focus in this chapter is on how CET provisions might be best designed, developed and enacted to be accessible and effective for working-age Singaporeans in the pandemic era. While the investigation reported and discussed here is based in Singapore, its findings may resonate far more widely as the issues discussed here are of relevance not only within Singapore, but also beyond. Quality CET, engagement of adult learners and employability sustenance are concerned in both developing and developed countries alike, increasingly so as the impact of COVID-19 intensifies globally and as many countries struggle to deal with the economic fallout of COVID-19.

To set the context, the chapter commences with discussing CET in Singapore, followed by a description of the investigation undertaken and its findings. In all, it proposes that individual subjectivities, societal needs and expectations converge and are contested through CET. It is also an educational provision in which individuals have differing viewpoints and contradicting opinions as members of a community in co-constructing their CET experience. As this educational provision is not compulsory, these matters are central to how adults elect to participate and engage with it. Realising its key goals requires being broadly inclusive and meeting the needs of those for whom they are being designed, enacting them in ways that make them accessible both in physical and educational terms, and offering experiences to achieve the outcomes that these individuals desire. What is proposed here is that provisions of CET need to address dual goals: developing the employability of students and graduates but doing so in ways and with outcomes that sustain and support working-age adults' sense of self. In this way, the findings remind and rehearse Rogerian concerns about adults as learners from an earlier era.

CET in Singapore

In a period described by some as the knowledge society (Leadbeater, 1999) and/or the informational society (Castells, 2000), modern society is characterised not only by the

emergence of a knowledge-based economy, but also by a concomitant rise in social inequalities (Leadbeater, 1999). These inequalities are often perpetuated through educational institutions; the importance of the schools as arteries in the society's knowledge circulatory system is encapsulated in Singh's (2002) observation:

> Schooling institutions perform an increasingly significant role in the differential distribution of knowledge and information resources during these times. In addition, alternative, informal and virtual learning communities play a crucial role in the (re)production of the intellectual, moral and social human resources for the knowledge/informational society. (p. 572)

This is the case too with CET, where certain groups in society are marginalised by virtue of their socioeconomic status, family backgrounds, language differences, and age and/or educational standards, despite the efforts of the government in advocating lifelong learning (Fiel, 2020; Hoskins & Barker, 2014). This situation is particularly predominant in Singapore where a recent report on Singapore's results in the survey of adult skills—a product of the OECD PIAAC—indicated that older Singaporean adults, particularly those in the 55–65 age range, attained some of the lowest scores in literacy and numeracy among all participating countries/economies. The findings highlighted that the gap between the most and least proficient adults in Singapore is wide. Indeed, Singapore stands out as the country in which variability in literacy is greatest, at 77 score points, compared to the OECD average of 62 score points. While the report attributes the low proficiency among Singapore's older populations to the effects of age, educational attainment and language barriers, it underscored the inequality in access to education caused by differentiated access to technology and resources.

The Singapore government has long been prescient in recognising the importance of developing further working-age adults' occupational capacities. The Skills Development Fund (SDF) was established in October 1979 through the enactment of the Skills Development Levy Act (Government of Singapore, 1979). The SDF is supported through contributions by all employers in Singapore. Correspondingly, the government contributes to the SDF an amount equal to the levies payable by the employers. The fund is used to finance the "promotion, development and upgrading of skills and expertise of persons preparing to join the workforce, persons in the workforce and persons rejoining the workforce", "the retraining of retrenched persons" and upgrading business operations and technology (Government of Singapore, 1979). This initiative was supplemented by the establishment of the Lifelong Endowment Fund Act in 2001 to finance Singaporeans in their pursuit of CET to enhance their continuing employability (Government of Singapore, 2001). These earlier initiatives emphasise a key policy focus for Singapore: the central role played in its economy by its workforce and the need for that workforce to be currently competent and able to respond to the constant changes in global economic circumstances and to support the ongoing viability of Singapore.

More recently, SkillsFuture Singapore (SSG) was formed as a statutory board under the Ministry of Education. It drives and coordinates the implementation of the national SkillsFuture movement that seeks to strengthen the ecosystem of quality

education and training in Singapore and to provide Singaporeans with the opportunities to develop their fullest potential throughout life, regardless of their starting points. As encapsulated by their own description (SkillsFuture Singapore and Workforce Singapore, 2020):

> SSG plays a key role in the quality assurance for private education institutions and adult training centres. Together with educational institutions and training partners, SSG ensures that students and working adults have access to high-quality, industry-relevant training throughout life. SSG also brings together synergies in CET and pre-employment training, so skills requirements will continue to meet the demands of different sectors of the economy.

Following the advent of the SkillsFuture policies and its accompanying emphases on the post-secondary education institutions (PSEIs) as providers of CET, there is an increased interest in the transformation and professionalisation of those who organise programmes in and enact CET (Institute of Adult Learning, 2017a, 2017b). Specifically, there is increased attention on creating the opportunities for adult learners to upskill and reskill through CET, including learning through their work activities and in their workplaces. More than in other sectors, the efficacy of CET educators and providers, programmes and approaches are contingent on their links to workplaces and the CET students who work in them. To better understand what is required to be learnt through CET programmes and how best this knowledge can be learnt, it is necessary to identify and capture the requirements of the CET learners, as their perspectives will be central to the provisioning of effective CET and learners' engagement in them.

Context of Study

In this chapter, we draw on the empirical evidence of Phases 1 and 2 of a research study funded by SkillsFuture Singapore, from 2018 to 2021 (Billett et al., 2022; Leow et al., 2022). The study adopted a mixed methods approach comprising a combination of qualitative and quantitative procedures for the gathering and analysis of data. The research was structured in three phases. Phase 1 comprised gathering and analysing interview data from 180 graduates who had recently completed CET programmes, mostly offered by the polytechnics, and 40 employers of different sized companies in Singapore. In Phase 2, survey data were collected and analysed from 860 working-age Singaporeans who may or may not have participated in a CET programme. In addition, a supplementary survey was administered to ascertain changes in views about the accessibility and utility of online education provisions post a 9-month lockdown (Billett et al., 2022).

The key question guiding this research is: *What are the kinds of capacities and institutional practices required for CET educators to provide accessible and effective CET provisions for Singapore's adult working population and how might these capacities be developed?*

This key question is informed by four sub-questions:

1. What are the learning needs and requirements of adults in Singapore to remain employable across lengthening working lives?
2. What kinds of curriculum models, practices, and pedagogic strategies will best meet the needs of these learners?
3. How can the educational capacities required to meet these needs be developed within and across the PSEIs?
4. How should adult Singaporeans come to engage in the task of securing their employability?

Method

Interviewees

The interviewees comprised 180 working-age adults who had graduated from CET programmes within 4 years from the commencement of the study, and with at least 5 years of working experience. Graduates of CET programmes were selected as interviewees as they had informed insights about the purposes for participating in CET and the kinds of educational experiences provided, including their accessibility and how these provisions engaged them in learning aligned with their purposes for participating.

Most of these informants (63%) were male ($n = 112$), whereas 33% were female ($n = 64$). They were from a diversity of age groups (17.8% were 21–29, 24.9% were 30–39, 33.7% were 40–49 and 23.7% were above 50). These informants represent a range of educational backgrounds, having more years of schooling than the Singaporean mean, that is, 11.2 years (among residents aged 25 years and over; Department of Statistics Singapore, 2020). They are employed in a range of industry sectors, but predominately in education, health and professional services sectors, all of which are prominent in the Singaporean economy. The findings arising from these interviews are presented and discussed in terms of (a) what promotes participation in CET, (b) factors associated with individuals' CET attendance and (c) qualities of effective CET teachers.

Data Analysis

The analysis of quantitative data obtained from the pre-interview surveys commenced with data cleaning through consistency checks and missing value analysis, followed by descriptive analysis, undertaken using SPSS version 27. Descriptive statistics, mainly frequencies, were used to explore patterns of responses associated with

purpose, interest, efficacies and preferences. These response patterns were tabulated for presentation and discussion under the Findings section.

The interviews were fully transcribed for content analysis, using NVivo 12. The process included transcripts being read multiple times and coded to identify patterns and themes to draw out inferences about what the CET programmes afforded the interviewees and how they were engaged with by interviewees through their participation, including their means of attendance and engagement.

Through the interview data, distinct kinds of purposes were identified, including why these adults participated in CET, and how the CET provisions and the qualities of CET teachers were effective in securing their attendance and participation. These analyses are important for identifying alignments among reasons for participating, modes of attendance, and processes of engaging working-age adults as measures of what constitutes effective CET.

Beyond the overall goals for CET programmes, data on how the programmes were delivered (e.g., online, face-to-face, or combination), the approach, dispositions and actions of CET teachers were elaborated through the perspectives of those who had experienced them. Hence, practical findings associated with the organisation of learning experiences (i.e., curriculum) and their enactment can be derived from these data. Further, the findings emphasise the importance of viewing educational goals, processes, and outcomes as being inherently relational (Billett, 2006). That is, bases for understanding degrees relations are founded in the duality between what is afforded individuals on the one hand, and how they come to engage with them, on the other. While this sociocultural perspective privileges the social and cultural settings that are generative of the experiences provided for adults, there is also the need to account for how individuals come to engage with and learn through from those experiences. In this way, there are personal bases to the processes of learning through these programmes. These person-dependent factors underpinned much of the judgements that were made, relating to individuals' personal experiences, needs, capacities or exigencies (Billett, 2006). Hence, it is necessary to understand both the provision of CET experiences and how these were engaged with by individuals.

Ethical Clearance

To ensure confidentiality and privacy, informed consent was secured and explanation of the procedures and participants' rights was provided prior to commencing the interviews. Participants' permission was also sought to record the interviews. In the case of the two participants who declined to be audio-recorded, notes were taken. Further, to maintain participants' confidentiality and anonymity, names were removed throughout this chapter when excerpts of interview data are presented.

Findings

The findings reported here refer to five aspects of the participants' responses about the provision of CET they experienced: (a) key motivations for participation, (b) inhibitors of participation, (c) qualities of effective teachers, (d) government subsidies and (e) future provisions. Each of these is reported and discussed in the following sections.

Key Motivations for CET Participation

As working-age adults' participation in CET is of their own volition, understanding their key motivations is an important consideration for CET providers. Overall, most CET graduates report personal and professional reasons, often associated with employability: securing employment, shifting to new employment or advancing within existing employment. From the survey responses, the interviewees ranked their top three purposes for participating in CET, and while informants referred to learning associated with sustaining employability (i.e., professional motivations), they concurrently emphasised personal betterment and educational outcomes, as constructed by and through individuals' participation in these socially derived activities. These purposes are presented in Table 4.1.

From the interview data, three key motivations for participating in CET were identified: (a) personal and knowledge development, (b) relevance and practicality and (c) professional recognition, all of which emphasise personal factors and epistemologies (Billett, 2009).

Table 4.1 Motivations to engage in CET

Motivating factors	*n*	Percentage
Increasing possibility of employment	183	22.0
To increase my knowledge or skills	147	18.0
Government subsidy	121	16.0
Keep my job	106	13.0
To do my job better	59	7.0
My company requires me to do so	58	7.0
To obtain a certificate	34	4.0
To improve career prospects	34	4.0
To start my own business	23	3.0

Personal and Knowledge Development

Informants reported participating in CET predominantly to learn new knowledge, maintain their industry relevance, or to advance to the next education level. Some informants also reported intending to utilise the skills they gained through CET to transit to another career:

> I wanted to go and take a degree after my diploma. (Female, 21-29)
>
> It's really something that I add on to my personal skill sets. (Male, 40-49)
>
> My key impetus for taking that course was definitely to gain more knowledge and to fulfil my passion in sports, so being an avid runner myself I think the course, I wanted to know more especially from the coaching and the scientific point of view. (Male, 30-39)
>
> I took up the CET programme is because there are many people talking about data analytics, data science. It's a new field to me. Maybe I may need it in the future. But not at the moment, because most SME don't use this technology. And I think it could be helpful to helping my daughter's business. (Female, not specified)

These data suggest that these adult participants have clear intentions (Malle et al., 2001) in participating in CET and that there is a close alignment between professional and personal intents (Billett, 2009). This is perhaps not surprising given that working-age adults' sense of self or subjectivity is often strongly aligned with their occupations (Noon et al., 2013; Suzman, 2020). So, the intertwining of these two sets of intents—the social and personal—emphasises the centrality of CET being able to deliver occupational outcomes that are also important to working-age adults' sense of self. Hence, their ability to sustain employability, either in the form of maintaining their current job or assisting movement to another, is more than an economic consideration (i.e., paid work): it is also germane to who they are as adults: their sense of self or subjectivity. Hence, the relevance and applicability of CET provisions to meet their needs are important.

Relevance and Practicality

There are also informants who engaged with CET to develop themselves professionally. They often measure their achievement based on how relevant their CET is to their work and how the newly acquired skills helped them in their workplace, or the perceived effectiveness of these skills in their future workplace:

> It's meaningful, it's useful, something that can be, that is practical I can use in my workplace. (Female, 50+)
>
> It's a skill set where I could use it for the supervision of my staff and the interns that I'm taking on board, so that's the reason, probably the core reason for the CET programme. (Female, 21-29)
>
> I find that training people and actually helping them to learn, will … have a positive outcome on my work performance as in KPI. So – so that was how I engaged with MTD because I thought ACTA was just the preview and MTD will be give me more theoretical basic kind of practical knowledge at work. (Female, 30-39)

> I was actually able to stay relevant and yet also apply like day-to-day stuff like immediately. So it's not like after studying for like two years and then I actually go out to work. It's just like I work and then I study and then I work again. So I actually do apply it really well. (Female, 21-29)
>
> I think I could apply the knowledge and the skills, you know that I've learnt, somewhat to my work. (Male, not specified)
>
> My work involves a lot of technical specification and with this course I am able to understand this system and the – the various equipment of system as being used in the building so in that aspect it helped me a lot. (Male, 40-49)

Noteworthy in these quotations is that the outcomes these working-age adults are seeking to achieve is not premised upon "passing the test", "getting the certificate" or "achieving high marks", but rather, applicability to their work-life goals. That is, the kinds of valued outcomes stated here are about the various applicable outcomes achieved through the education provision, rather than the certification provided by it, which is perhaps far more valued in school and preparatory education and training. Thus, rather than participation in an educational programme being an end within itself, these working-age adults are seeking outcomes from it that are aligned with their employability goals, and it is these that drive their intentionalities (Malle et al., 2001). This is not to say that certification is unimportant, but that the certification and other outcomes need to be aligned with the individuals' employability goals. In this way, their purposes for participation are shaped in the negotiations that comprise the duality between what is being afforded through these courses and what they mean for these individuals.

Professional Recognition

Indeed, there were informants who enrolled in CET to secure recognition in the form of a new certification as well as the increased opportunities it brings. Yet, again, rather than the inherent qualities of certification, they often measure the degree of their achievements based on tangible goals, such as a wage increase and being able to assume new roles due to their new qualifications:

> I was told that this particular course was really marketable and is upcoming and so it's something that I could acquire to make myself more marketable also in the work front. (Male, 30-39)
>
> I wanted to use it as a stepping-stone to get a new job or move in a different industry which I managed to do that. (Male, 40-49)
>
> First thing is transanctional, you got your paper to show your work. You have a qualification there. One. Another reason I should relay to my friends is progression. You get to go for your masters, you get to study more. (Male, 21-29)
>
> Number one is the certification. Err which also can help me to build up my resume and … and … recognition that I'm knowledgeable and skilful in this industry yeah. (Male, 40-49)
>
> To me it's that I, I achieved in terms of my job scope gets expanded. I got recognition in terms of the things I do and I was given a bigger job scope. To me is, that is in a way of promotion. (Male, 40-49)

> I think the programme also helped me to secure a job much faster than my peers. (Male, 30-39)

These motivations and personal purposes are essential to be accommodated in the focus and design of CET programmes as these adults reported electing to participate in them for these kinds of specific purposes. Hence, understanding those decisions and judgements about the likelihood of achieving those purposes is important to gaining insights into how effective CET provisions can be enacted to enhance individuals' participation in CET following their initial training.

As Roscoe (2002, p. 3) stated, "no professional completes their initial training equipped to practice competently for the rest of their life". This aphorism underscores the importance that professionals (as perhaps all working adults) must further develop their occupational knowledge to maintain the relevance of their skills (Lester, 1999). The key is that CET engagement and motivation are inextricably interwoven. Motivation empowers and strengthens CET engagement that leads to individuals' actions in their CET participation. According to Tranquillo and Stecker (2016), there are three interrelated basic psychological needs that serve to promote and enhance individuals' intrinsic motivation in their engagement with continuing professional education: *autonomy*, *competence* and *relatedness*. The same or similar psychological needs were often reported as in the quotes above. While autonomy denotes the ability of the individuals to act and make decisions independently on their CET engagement, competence refers to the feeling of pursuing and realising their CET goals in a proficient manner. Given the centrality of sense of self and subjectivity of these working-age adults and the threats to it by the prospect of unemployment (Billett, 2008), redundancy or failure to transfer to a preferred occupation, there is a necessary consideration of how their sense of self can be maintained, in such circumstances and negotiations. These issues are exemplified in the formation and maintenance of emotional bonds with others, such as peers in CET programmes. An environment that fosters these elements can prime individuals to become engaged and invested in their CET, but in a psychologically safe way that supports and extends their subjectivity as working-age adults. Here, issues about counselling prior to engagement in CET and assisting graduates in realising their employability goals begin to emerge as key adjuncts to the CET provision itself.

Inhibitors to Participation in CET

While gaining insights into working-age adults' motivations and personal purposes for engaging in CET is essential, understanding the factors that inhibited their participation is equally, if not more, important. This is because, ultimately, individuals decide how they come to mediate what they experience and learn from it (Billett, 2009). The Phase 1 interviewees reported common external environmental factors such as work commitments, travel time, family commitments, cost, and access to venues, as common inhibitors to their CET participation. These inhibitors are indicated in Table 4.2. It is noteworthy that time associated with work and travel are the

Table 4.2 Factors inhibiting CET participation

Inhibitors	*n*	Percentage
Job demands	71	20.9
Travel time	61	18.0
Family care commitments	43	12.6
Fees for CET programmes	32	9.4
Location of CET providers	30	8.8

most frequently mentioned impediments. For instance, Phase 1 informants advised that they spent, on average, almost 1.5 h travelling per day to and from work.

While the occupational fields of the interviewees encompass various industries, these inhibitors are consistent with past literature that examined the barriers to participation in continuing professional development and education globally across Africa (Bwanga, 2020; Kanamu et al., 2017), Australia (Marriott et al., 2007), Canada (Penz et al., 2007), Japan (Mizuno-Lewis et al., 2014), Malaysia (Aziz et al., 2013), Saudi Arabia (Aboshaiqah et al., 2012) and the UK (Furze & Pearcey, 1999). These barriers can be categorised into three broad areas: attitudinal, physical and structural.

Attitudinal barriers are denoted by the lack of self-motivation and the feeling of CET's irrelevance to their personal and professional needs. While engagement with CET remains a personal pursuit where individuals identify their own learning needs and engage in appropriate CET programmes, there is a need to adopt a more holistic approach and to establish a CET system where the provisions of CET are made more equitable to everyone if they wish to engage in it. Learning is more effective when the learner is engaged in applying theory to practice (Harden & Laidlaw, 2021). This holds implications for the CET teachers in creating rich and authentic experiences for the learners that will engage them.

Physical barriers are identified as impediments that hinder individuals' participation in CET. Factors such as time constraints, work and family commitments, financial constraints, distance to CET venues, and restricted accessibility to learning resources are examples of physical barriers. To help their employees overcome some of these barriers, employers can consider providing employees with protected time and supporting employees' CET to take place during working hours.

Structural barriers are largely represented by practices, procedures and policies that serve to limit individuals' opportunities to engage in CET. Examples of these structural barriers may include, but are not limited to, lack of knowledge about CET opportunities, staff shortages, poor CET programme administration and lack of employer's support. In our study, while there is an electronic portal that seeks to offer a one-stop solution to companies and individuals looking for suitable accredited CET courses, there was generally poor user experience among our informants with regard to this portal:

> I did try to enquire some course on the SkillsConnect or SkillsFuture, but I realise that the information, I have to wait quite a long time for people to reply me? So, if you ask me what can the SkillsFuture do? It makes me wonder if that the listing there has been reviewed actively, because you know firstly, when I recently enquired about the course, they told

> me that I should have contacted another person, but I told them that the person I contacted is actually being listed as the contact person in the SkillsFuture website. After that, I did ask a series of questions, which nobody replied me, and we have to follow up with a call. And then, they said that they will get the information sent over, which until now, I have not received the email of the information. So, my comment on the SkillsFuture that, even before they are thinking about reaching out to people, maybe they have to think about responding to people first. (Female, 30-39)

A sizeable proportion of our informants is employed by small- and medium-sized enterprises (SMEs), and due to a shortage of staff and associated high workloads in SMEs, these informants often had to forgo their CET participation to sustain the company's productivity:

> I think one of the biggest challenges is manpower, because now with the rising operation cost and manpower cost right, it is kind of difficult for SMEs to hire like, workers in excess.… SMEs, they are faced with this double whammy whereby clients are cutting down cost and then your staff is asking for better rates, payouts. So, the SMEs can only hire a workforce that can sustain their current client, they cannot hire in excess. So, when we were considering sending engineers or staff for courses right, so these people who are not available during that course period, the other engineers or other staff will have to cover the workload. So typically, I feel that the duration of the course is very essential. So, if it's just a two-day course or a three-day course, I feel that the company is quite supportive. But if let's say, you are talking about a long-term course where the person will have to be involved in a year or a few months, then it is quite tough, because the workload will be too heavy to take, and you cannot possibly delay a client's request for that long. (Female, 30-39)

At times, this challenge may be aggravated by poor organisational culture where managers or employers do not believe in the need for CET.

Qualities of Effective CET Teachers

The quality of education can never exceed the quality of teachers and their teaching. In order to develop a functioning and sustainable CET system, we must first understand what constitutes effective CET teaching. In the pre-interview survey, the informants indicated from a set of descriptors, with the option to add more, what constitutes the qualities of effective CET teachers. The responses are presented in Table 4.3. In this table, the qualities are set out in the left column, ranked in terms of frequency [*n*], indicated in the right-hand column.

The data are consistent with past teacher effectiveness research that identified a range of attributes and competencies that influence the quality and effectiveness of teaching. These qualities include:

i. Deep representation of subject matter knowledge (Berliner, 2001, 2004)
ii. Ability to relate to individual students (Lingard et al., 2002)
iii. Repertoire of pedagogical skills (Shulman, 1986, 1987)
iv. Creating optimal environments for student learning (Hattie, 2003)
v. Problem-solving skills (Ayres et al., 2000)

Table 4.3 Effective CET teachers' qualities

Teaching practice	*n*
Providing relevant experiences for learners' needs and purposes	138
Accounting for and are sensitive to students' readiness	109
Make applicable the concepts (e.g., theories) they are advancing (i.e., teaching)	109
Illustrate what is to be learnt and its purposes (e.g., examples, stories)	98
Demonstrate competence in the field in which are teaching	84
Assist meeting learners' purposes and needs by being flexible and adaptive with approaches to teaching and assessment	72
Engage and utilise learners' experience and agency	67
Engage interactively and reciprocally with learners	67

While these qualities reflect what our informants expect of their CET teachers, what is perhaps noteworthy in their ranking of these qualities is the dual goals of promoting the students' employability and sustaining their sense of self as working-age adults. Interwoven through these responses are both sets of concerns. Hence, the requirements for an effective CET educator are more than having the occupational knowledge required to practise the targeted occupation; there is also the ability to provide experiences that will assist the students to learn that knowledge effectively so they can then apply it. Yet, and in addition, those teachers are required to exercise educational experiences in ways that are commensurate with the adult learners' existing readiness and capacities and in ways of engaging them respectfully in those processes that draw upon their experiences and contributions as adult members of the community.

Hence, in these responses, the requirements for effective CET teaching emphasise the duality of the educational needs of these adults: developing their employability and sustaining their sense of self in doing so. Clearly, there are issues of precarity being rehearsed here. That is, in embarking upon CET, these students potentially risk consequences for their sense of self as working-age adults. All of this suggests that overcoming issues of inequality and enhancing accessibility to CET for the adult-age population is more than the provision of programmes: it extends to how they are designed (i.e., to meet employability goals) and assisting these working-age adults to engage in a potentially precarious transition. That transition is prone to being risky, particularly in the era of the COVID-19 pandemic in which employment options and work requirements are becoming more dynamic, and older workers are potentially inhibited by societal sentiments that view them as being less adaptable and responsive, making it more difficult for them to learn new work requirements (Billett et al., 2021a, 2021b).

Government Subsidies for CET

Subsidies in the form of payment is an accepted practice in Singapore to encourage participation in specific kinds of education, and CET is no different in this regard. The potency of subsidies is evident in responses to the question about whether people would participate in CET if there were no subsidies. As can be seen in Table 4.4, there is a strong consensus among the respondents that subsidies are likely to be an important factor for individuals' decisions about CET participation. Of those who participated in CET, approximately 60% suggested that they would probably not do so without subsidies. These government subsidies are seen by working-age adults as important incentives for participating in CET programmes, more so by those who have not participated in CET as compared to those who have.

The level of financial support an adult learner receives is likely to affect the possibility that he or she will engage in CET. Poverty and living situations may also serve to limit or prevent access to supportive technology, such as a stable Internet connection, and these situations may also leave an individual with limited places to study (Bamber & Tett, 2000). Across different professions, financial constraints remain a major impediment to CET participation among working adults (Eroglu & Kaya, 2021; Zhang et al., 2020), and often this constraint may be a major determinant in their decision to engage in CET. Even though the Singapore Government's recurrent expenditure on education has steadily increased over the years (Department of Statistics Singapore, 2021a), the number of training places taken up under the Skills Training and Continuing Academic Education Programmes under the Institute of Technical Education has witnessed a drop from 20,932 in 2010 to 7650 in 2020 (Department of Statistics Singapore, 2021b).

While providing CET subsidies appropriate to sustaining employability may appear to be attractive to working adults, the fees for CET programmes appear to be of a lesser concern than their job and family commitments (see Table 4.2). Successful attainment and progression through CET provisions often go beyond the dollars and cents to involve a constant fashioning and re-fashioning of the self (Reay et al., 2010) to realise one's CET goals. Given that the Singapore Government has been actively promoting and financing CET for its citizenry, the solution to increasing CET participation may perhaps lie in situating CET within the workplace to assuage the various concerns of working adults that inhibit their engagement with CET. With these considerations in mind and, in particular, to find ways of securing accessible and supportive provisions of CET, it is worthwhile considering what those provisions might look like in the (near) future.

Table 4.4 I would not sign up for a CET programme that is not subsidised by the government

Group	*n*	Percentage of responses			
		Strongly disagree	Slightly disagree	Slightly agree	Strongly agree
Did CET	462	9.1	19.7	28.3	32.0
Did not do CET	236	4.5	13.6	36.7	34.5

Table 4.5 Workplace actions to support learning

Actions in the workplace to support learning	Did CET		Did not do CET	
	n	%	*n*	%
Opportunities for applying what you have learnt in CET	377	71.1	180	68.0
Opportunities for learning at work (new challenging tasks within current job)	329	62.1	154	57.9
Opportunities for progressive rotation of job roles	291	54.9	146	54.0
Mentoring by more experienced colleagues	235	44.3	118	44.4

Future Provisions of CET

The Phase 1 interviewees often referred to their workplaces as being an important site for their ongoing learning within and across their working life. This raised questions about how learning can be supported through workplace provisions, and how PSEIs can reach out in support to promote workplace learning. Phase 2 respondents indicated how their workplaces could support the CET-related learning. As presented in Table 4.5, a key priority for both groups of participants (i.e., those who have participated in CET and those who have not) is the availability of opportunities in the workplace to apply what they have learnt from their CET programmes in their work.

The next most preferred workplace action was the provision of opportunities to promote learning through engagement in new tasks, as well as structured experiences in their workplace, such as progressive job rotations and direct mentoring. In this way, the provision of learning experiences and follow-up support in the workplace in terms of organising those experiences and augmenting learning through mentoring offers a way forward. In expressing their "wish list" for supportive workplace learning practices, the informants refer to experiences that are highly accessible to them and that offer highly applicable learning outcomes that can be exercised in their existing workplaces. Most centrally, the most preferred option emphasises the key imperative of employability outcomes from CET: that what has been learnt needs to be applicable to work practice and this should be inherent within the CET programme itself. That is, more than an institutional focus on teaching and assessment being the endpoint, the educational provision needs to engage and extend into their work activities. There are specific suggestions about how that learning can arise within their existing workplace to achieve the kinds of goals that are important to them in ways that are guided and effectively supported. Again, these responses emphasise that participation in CET should be directed towards developing capacities that can promote working-age adults' employability, thereby sustaining their sense of self as adults.

The respondents also ranked a set of suggestions about how CET provisions could be enhanced by contributions from workplaces reaching into the provisions provided within CET institutions; that is, how the workplaces can be integrated within the CET

Table 4.6 Actions by CET providers to support work-based learning

Actions by CET providers to support learning through work-based activities	Did CET		Did not do CET	
	n	Percentage	*n*	Percentage
Industry experts to deliver lessons	294	56.6	122	46.2
Work placement/attachment opportunities related to CET course	284	54.7	159	60.2
Linking CET assessments to work-based activities	281	54.1	126	47.7
Work-based educational project	244	47.0	114	42.2
CET teachers coming into the workplace	125	24.1	62	23.6

programmes and support learning in and through work. Their rankings are presented in Table 4.6.

In their preferences, there is a very strong emphasis on integrating and making relevant the CET provision by extending it into the workplace. This includes having industry experts engage with learners through presentation, learners having the opportunity to engage in workplace experiences, and work-based activities being used as the basis for effective and reliable assessment. Added here is a focus on projects based on the workplace, with CET teachers engaging in the workplace being the lowest preferred action. Again, noteworthy here is the emphasis on the organisation of the curriculum, as well as pedagogic and assessment strategies being linked strongly to the work-related activities of CET learners. In these ways, future provisions of CET are seen to be strongly associated with having and integrating workplace experiences as part of the CET programme, its teaching and its assessment. Further, there are consistent emphases on finding ways to integrate the two sets of experiences (i.e., in the workplace and PSEIs) to achieve effective CET outcomes. This finding is consistent with the government's initiative to integrate and foster a stronger link between the curriculum taught in school and the needs of the workplace and industry through the SkillsFuture Work-Study programmes.

Conclusion

The CET space is a site where individual identities converge are contested and reconciled through their experiences of participation in it. It is also a place where individuals can share differing viewpoints and contradicting opinions as members of a community in co-constructing their CET experience. To realise the key goals of education provisions is for them to be broadly inclusive, meeting the needs of those for whom they are being designed; enacted in ways that make them accessible, both in physical and educational terms; and offering experiences that achieve the kinds of outcomes that these individuals want. What has been proposed here is that provisions of CET need to address dual goals: developing the employability of students and graduates but doing so in ways and with outcomes that sustain and support working-age

adults' sense of self. Curiously, some earlier perspectives on adult learning and development are premised upon clinical psychological models associated with a primary focus on maintaining potentially fragile individuals' sense of self (Rogers, 1969). This is accompanied by Erving Goffman's ideas about the importance of adults' projection of self in daily life (Goffman, 1990); that is, the centrality of a personal narrative exercised and projected by individuals to sustain their sense of self. This led to earlier accounts of adult education premised upon Rogerian clinical models and concerned about facilitation of learning—making things easy—to maintain adults' sense of self during periods of transitions (Rogers, 2001).

There has been movement away from those considerations to embrace more comprehensive considerations of adult learning, including their prior knowledge, prior experiences and more broad-based accounts of development. Yet here, while not as fragile or precarious as perhaps was suggested in those earlier accounts, the importance of addressing adults' sense of self as learners and constructors of knowledge is perhaps never greater than in considerations of their learning for, in, and through working life. The interconnections between that sense of self and these adults' occupations, work roles and satisfaction derived from working life are clearly indivisible, from the kind of data presented here. In this way, the findings reflect the importance of the sociocultural perspective that draws upon and acknowledges the contributions of an relations between the suggestions of the social world and how individuals engage with those suggestions and learn through them (Billett, 2006).

Returning to earlier models and approaches emphasises the need for counselling and guidance, not so much as therapeutic interventions (Rogers, 1969, 2001) but to assist working-age adults in making informed choices about the kinds of programmes they want to participate in and the alignments with their work-life goals, promoting their readiness to engage effectively, thereby supporting successful outcomes (Billett, 2015) and being provided with the kinds of educational experiences which will achieve those employability goals. However, just as counselling might be required prior to participation in these programmes, so might it be advanced at their conclusion. The focus here is not on a therapeutic response to protecting sense of self, but rather to perhaps assist graduates in securing the employment goals that they seek to achieve either within the existing occupation or in their transference to new ones.

Since the ability to participate in CET is mediated by individual and situational contexts, which may expand or restrict one's choices (Sen, 1999), it is essential that these voices, such as those of our informants, are embedded within a CET structure that maximises educational opportunities while providing individual flexibility. Without a significant shift in approach, the current CET model is likely to reinforce and perpetuate existing inequalities not only in terms of access, but also engagement, attainment and sustainability. This would be a regressive outcome when the ongoing challenges precipitated by the COVID-19 pandemic and digital revolution underscore the criticality and urgency of CET more than ever. The findings from our study suggest that the pursuit of an effective CET model in enhancing continued employability necessitates a new paradigm grounded in the collectivisation of CET as a social enterprise and shared responsibility, while upholding the principles of learner-centred education. The interdependence and collective expertise of the PSEIs and other CET

providers, with the support of the state, can be harnessed both to support working adults' individual CET pursuits and advance workplace productivity. When multiple CET pathways are available by which CET can be engaged and re-engaged over the working lifespan of adult workers, individuals are better able to appreciate and benefit from a responsive and adaptive system that accommodates individuals' needs and circumstances, while contributing to a shared sense of responsibility, purpose, and identity among its stakeholders.

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Chapter 5
Determinants of Communication Competencies of International Graduates: An Exploration Using the Sociocultural Perspective

Thanh Pham

Abstract Universities worldwide have made significant efforts to enhance graduate employability by embedding graduate attributes in teaching and learning programs. This initiative aims to enhance graduates' employability skills such as communication, teamwork, and critical thinking. However, many studies have shown that the attributes that graduates learn at university cannot be directly transferred into employability skills. Instead, graduates must develop employability skills in their workplaces. This study utilises the sociocultural perspective as the theoretical framework from which to examine the factors that determine international graduates' communication competencies in the workplace. This qualitative study which was conducted using 15 international graduates deployed in-depth interviews as the main data collection method. The findings reported that culturally diverse work environments and living and work experiences had profound impacts on the international graduates' communication competencies in both their short- and long-term employment journeys. The findings imply that to enhance international graduates' employability, universities, and industries must better collaborate so that students can learn communication skills in the labour market rather than at their universities.

Introduction

Workforce has become increasingly diverse due to labour mobility—a phenomenon catalysed by globalisation, economic cooperation agreements (e.g., European Union, North American Free Trade Agreement, and Agreement in Trades in Services). This phenomenon has been exacerbated by the "war for talent" between healthy economies like Australia, England, Canada, and America due to their shortage of skilled workers (Chiswick & Hatton, 2003). Advanced countries have supported migration by sponsoring skilled workers and granting post-study work rights to international graduates to remain in the countries for certain periods. Taking Australia as an example,

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the number of international students in Australia has kept increasing for the last two decades and international education contributed A$40.3 billion to Australia's economy in 2019 (Department of Education, 2019). International students have also been acknowledged as an important part of Australia's workforce due to its shortage of skilled workers. Australia's government has in turn launched various policies to push the employment of graduate students.

In spite of these efforts, there is still clear evidence of alarmingly poor employment outcomes for international graduates. In 2019, international graduates' unemployment rate was much higher (10.6%) than the national average (5.7%) and a large number worked either part-time or in low-skilled occupations (30% and 17%, respectively) (Australian Bureau of Statistics, 2019). In 2020, 29.6% returned to study (Department of Home Affairs, 2018) and an increasing number returned to their home countries (Pham, 2020). The international graduates' limited professional skills (e.g., verbal and written communication, problem solving, analysis, critical thinking, and teamwork skills; Pham, 2021a) contribute to their unsatisfactory employability outcomes. International graduates' possession of these employability skills is crucially important because employers more often make hiring decisions based on graduates' professional skills rather than their discipline-specific knowledge and technical skills (Finch et al., 2013; Graduate Careers Australia, 2016). Unfortunately, the international graduates' communication skills are their most common limitation (Blackmore et al., 2017; Pham, 2021b). While the current literature has focused on reporting the communication limitations that face international graduates, the causes of these limitations remain underexplored. To address this gap, this study explores how sociocultural factors in the workplace influence international graduates' communication competencies. This study is structured as follows. First, it discusses the various perspectives on international graduates' communication competencies. Second, it discusses the sociocultural perspective, which is the underpinning theoretical framework deployed herein. Then, it reports the methodology, and finally, it discusses the findings.

International Graduates' Communication Competencies from Different Perspectives

Communication skills are often interpreted in terms of linguistic skills, which are understood as cognitive dispositions (Blomeke et al., 2015). Therefore, communication skills are measured using standardised written and oral tests. In these tests, international students face two common problems: their "heavy" accents and limited terminologies. Regarding accents, international students often struggle to pronounce sounds and phonemes that do not exist in their languages. For example, Asian students from certain regions often have difficulty with pronouncing the "r", "th", and "w" sounds. Accordingly, some students are deemed to have an "awkward" accent that is hard to understand (Barton et al., 2017). This is because British and American

English accents are viewed as the most preferable because they are "clear", "intelligible", and representative of "world standards" (Ngoc, 2016). Those who do not possess an accent that is familiar to British and American English speakers often experience difficulties in their interactions with other people.

Regarding limited writing and technical terminology skills, it is difficult for some international students to write and communicate in a natural manner. In daily practice, their difficulty increases because native speakers often use slang phrases that are not taught in universities' official teaching and learning programs, such as "grab a cuppa", "calling the roll", and "put your hands up" (Barton et al., 2017).

Conversely, the research has argued that a range of communication competencies should be included, such as discourse (i.e., capacity to speak and write in a suitable context), actional (i.e., capacity to convey communicative intent), sociocultural (i.e., capacity to use culturally appropriate language), and strategic (i.e., capacity to learn the language in the context) factors (Celce-Murcia et al., 1995). In short, non-verbal aspects, as an important part of communication, should be examined and should include all the physical signals that occur when a person talks, rather than their actual words (Braun and Mishra, 2016). Rohner and Schutz (2015) suggest that common physical signals include haptic signals (e.g., touching), body language (e.g., posture, mimicry), proxemics (e.g., the chosen spatial proximity to each other), and physical characteristics (e.g., clothing and cosmetics), with body language being particularly important in communication. Sharing a similar view, Blomeke et al. (2015) argue that communication should include the competence to act. This competence refers to the ability to effectively adapt to one's social environment or behave appropriately according to the situation. According to this notion of competence, individuals are perceived to have good communication skills if they show behaviours which are accepted widely in the society. Therefore, this line of research argues for the use of competence-oriented examinations to assess multifaceted aspects of communication.

The current literature has mostly measured international graduates' communication competencies using standardised written and oral tests, which has resulted in an incomplete picture of what causes the international graduates to have limited communication skills when transiting to the workforce. Therefore, this study utilises both perspectives to examine the international graduates' communication competencies in a wider context.

Sociocultural Theory

There are two main paradigms of sociocultural theory. The first is the object-centred sociocultural approach that emphasises the important role of sociocultural contexts, which include the tools and objects used to mediate human activity (Eteläpelto et al., 2013). Common mediators in the workplace are the power structures, different stakeholder interests, affordances, and opportunities to participate in certain work practices (e.g., activities, interactions, and guidance) (Billett, 2004). Meanwhile, Vygotsky (1978) emphasised the role of language in human thinking and learning, while Lave

and Wenger (1991) and Stetsenko (2005) emphasised the roles of situated action and learning. An important assumption of this perspective is that learning is a process of participating in social goal-directed activities (Billett, 2004; Billett & Smith, 2006). Therefore, these studies argue that individuals' work-related knowledge, skills, and abilities are connected to the level of their engagement and participation in their work-related practices. It should be noted that people have different levels of power in the workplace; thus, they access their work activities and learning opportunities differently.

The second paradigm is the subject-centred sociocultural approach that strongly embraces the concept of professional identity (Eteläpelto et al., 2013). This approach emphasises that individual learning is decided through commitments, ideals, beliefs, interests, and values (Eteläpelto et al., 2013; Pham, 2021c). A key factor that determines how individuals can learn is through self-reflection (Pham, 2021c). Individuals must actively decide whether or the extent to which they desire identities that have been socially suggested. This second paradigm is connected to the concept of agency (Pham, 2021c). Billett (2004) argues that "situational factors alone are insufficient to understand workplaces as learning environments. What is required is an understanding of the way individuals' agentic action and intentionalities […] shape how they participate in and learn through work" (p. 316). Consequently, Billett (2004) and Pham (2021c) utilise the concept of agency to acknowledge that individuals are not fully subjugated by the social context. Pham (2021c) evidenced that international graduates had the capacity to actively elect whether or the extent to which they desired to engage in social activities and use sociocultural mediators. They could also decide how to engage with the constraints imposed by the workplace.

In sum, this study uses the sociocultural perspective to explore how international graduates' communication competencies are both facilitated and constrained by factors that are captured by both object-centred and subject-centred sociocultural approaches. This study was guided by two research questions:

1. What difficulties do the international graduates face in their transition to the Australian labour market?
2. What are the factors that determine their communication competencies?

Methodology

Participants

This study used snowball sampling to recruit 15 international graduates who were studying various degrees at Australian universities to participate in this study. The participants had to meet the following criteria: (i) they had completed a degree in Australia (undergraduate, master's, or PhD); (ii) they had stayed in Australia on the Temporary Graduate visa (the terms of which are that those graduating with a bachelor's or master's by coursework degree can live and work in Australia for two

years. This rises to three years for those graduating with a master's by research degree, and four years for those graduating with a doctoral degree); (iii) they were living in Australia when the research was conducted; and (iv) they had either full-time, part-time, or casual work experience. No restrictions were set on the time that had elapsed since the participants had graduated; however, for the majority, 1–5 years had passed since their graduation. At the time of the study, 10 out of the 15 participants had obtained permanent residency, and the others held the Temporary Graduate visa. All participants were made aware of the nature of the study and consented to participate and were ensured that any name used the research publications was a pseudonym. The study had ethical clearance approved by Monash University before data collection. The participants consented for their data to be used in any subsequent article(s). The sample was diverse in terms of sex, nationality, educational level, and discipline. The participants' demographic details are shown in Table 5.1.

Table 5.1 Participants' demographic details

Variable	Sub-group	*n*
Gender	Male	8
	Female	7
Nationality	Vietnamese	3
	Chinese	5
	Thai	1
	Japanese	1
	Malaysian	1
	Singaporean	2
	Indonesian	2
Age group	20–30 years	7
	31–40 years	8
Study level	Undergraduate	11
	Master's	3
	PhD	2
Field of study	Business (e.g., marketing, finance, accounting, management, sales)	5
	STEM (e.g., IT, engineering, construction, medicine)	5
	Education	3
	Linguistics	2
Profession	Academic (full-time and part-time)	5
	Industry staff (full-time and part-time)	5
	Program coordinator (full-time and part-time)	1
	Language teaching (full-time and part-time)	2
	Unstable job (e.g., part-time work in shops and supermarkets)	2

Data Collection and Analysis

This study utilised a biographical interpretive method via in-depth interviews to collect data. According to Erel (2015), biographical approaches allow for an understanding of the dynamic nature of the relationships between structure and agency by unpacking how migrants produce, mobilise, and accumulate different types of capital. At the start of the interviews, the participants were asked to answer an overarching question which acted as a narrative prompt; Ross and Moore (2016) called this a "single question aimed at inducing a narrative" (SQIN). This study's SQIN was, "Can you tell me about your employability journey in Australia since you graduated?" While the participants were answering the question, the researcher actively listened to and transcribed key phases, which were then elaborated upon in more traditional semi-structured interviews using prompts. As informed by the research questions, the semi-structured interviews focused on unpacking the difficulties in the participants' communication competencies and navigation strategies. Example interview questions included: "What were the main difficulties you had in the social interactions at your workplace?", "How did you manage to overcome the difficulties that you experienced?", and "How do you perceive the changes in your life over the last few years?" Since the graduates had different experiences, these interview questions were revised depending on each case. Each interview lasted approximately 30–40 min.

The analysis began with the researcher and an assistant thoroughly reading the interview transcripts and then repeatedly discussing and questioning any taken-for-granted assumptions until a clear understanding of the graduates' experiences emerged. Thematic analysis was used which was mainly theory-driven, while any remarkable new codes that emerged from the data were also recorded and used to inform the underpinning theory. The thematic analysis process moved from a general level to a more specific level. As guided by the research questions and the underpinning theory, the two following broad categories were established: "difficulties in communication competencies" and "factors that influenced communication competencies". The codes were then grouped into these categories, and any codes that referred to the same phenomenon were grouped into themes. New codes were added to the established themes or developed as independent themes.

Results

Difficulties in International Graduates' Communication Competencies

Inadequate English proficiency emerged as a major limitation both before and at the start of the international graduates' employment endeavours. Some graduates expressed their anxiety and reluctance about applying for positions that required

frequent and direct verbal communication with local people; consequently, this limited their job opportunities. Several others shared their loss of employment opportunities after interacting with potential employers directly. One participant revealed, "I failed the online interview because they could not understand me based on my voice" (Maddy).

Although Australian employers' recruitment criteria explicitly state that international graduates must have an International English Language Testing System (IELTS) score of 7 or above in all four bands (Blackmore et al., 2017), recruiters always show a strong preference for those with oral communication competency. Yet, this preference puts international students at an immense disadvantage due to the limited opportunities for oral interactions both inside and outside of classes while studying in Australia (Arkoudis & Baik, 2014).

This study's analysis revealed that after they entered the field, the international graduates struggled with issues related to behaviours, shared interests, and values when conducting conversations with colleagues. For example, they perceived that their behaviour was not "standard" and their clothes looked different (e.g., "I noticed my clothes were more colourful"). A graduate from Vietnam narrated an odd situation in which they cheerfully greeted a colleague by saying, "Good morning. Were you excited when the German team won the game last night?" Their colleague replied, "What was the game about?" The graduate then realised that their question was "odd" because soccer is not a universally popular sport in Australia. Millet (2003) described such instances as "hitting an iceberg", which refers to venturing into a different culture without adequate preparation. Another graduate experience that prominently emerged was struggling to naturally and effectively join in daily conversations in the workplace. Consequently, they felt left out and failed to engage their colleagues in small talk to build collaborative working relationships. Such failures were not necessarily due to their limited English proficiency but were because of their shortage of sociopragmatic competence which refers to insufficient understandings of cultural values and social rules.

As aforementioned, the main purpose of this study was not to explore the problems that the graduates faced, but was to examine how the graduates' communication competencies were facilitated and constrained by sociocultural factors in the workplace. The responses revealed multiple factors; however, to remain within the scope of this paper, the following sections discuss two factors: a culturally diverse work environment and the graduates' living and work experiences.

Multifaceted Aspects of a Culturally Diverse Work Environment

The interviews revealed that the workplace environment type had a profound impact on how the graduates communicated in the workplace. Most graduates believed that their colleagues influenced their own verbal and non-verbal communication

skills. They all agreed that they felt comfortable working with and interacting with colleagues who were from the same or similar cultural background because they could easily express ideas and solve conflicts if they occurred. For example, a Vietnamese graduate said:

> Working at a multinational enterprise, I could easily team up with a Vietnamese or Chinese. We could meet and cancel our meetings anytime, and, sometimes, we did not need to talk, but could read each other's minds. Such a luxury does not exist when you work with Australian colleagues. (Vi)

Another graduate shared the experience of their first job interview and panel members' influence on their performance, as follows:

> I remember when I conducted the interview five years ago. At that time, I was young, lacked experience, and was not confident at all. I was scared during the interview, but fortunately, two of the panel members were Asian. They did not give me any special treatment, but when I talked to them and listened to their imperfect English, I felt more confident. They also asked about the types of questions that I knew. (Andrew)

Conversely, the graduates also reported a range of difficulties in their communication skills when they worked with people from different cultures, especially native English speakers. A common theme was that they could not communicate as smoothly and confidently. Notably, issues associated with smoothness and confidence did not come from the graduates' English proficiency, but from the context in which they performed their interactions. This point is illustrated below:

> I do not know why, it was the same 'me' who had the same level of English, but sometimes I could talk and sometimes I could not. I always got tongue-tied when meeting my colleagues. They never tried to understand me, but kept saying 'pardon,' which made me lose confidence in my English. (Allie)

These excerpts reveal what Bourdieu (1986) discussed as two aspects of cultural capital. He claims that cultural capital carries standardised values, which are legalised and institutionalised, and embodied values, which refer to one's preference or perception of the "correct" way of doing things. While people may possess the same standardised values, it is often the case that only the dominant groups' embodied values are acknowledged and validated. Regarding communication, Bourdieu (1992) highlighted two components: linguistic skill, which refers to the use of standardised grammatical structure, and legitimate language skills, which describes "the social capacity to use the linguistic capacity adequately in a determinate situation" (as cited in Cederberg, 2015, p. 41). In the current study, the graduates were aware of the embodied values and used legitimate language skills when communicating with colleagues who were from similar backgrounds. However, they could not read non-verbal language when they worked with colleagues from different backgrounds, which led to more problems in their communication ability. These situations clearly showed the influence of sociocultural contexts on the graduates' communication competencies (Eteläpelto et al., 2013).

However, insights from two of the graduates who had work experience in different sectors unpacked the complexity of the short- and long-term impacts of the sociocultural factors. These graduates had a strong desire to work in local organisations

because they wanted to learn about Australian culture. However, they failed many job interviews, mainly because of their limited English proficiency. One of them expressed their extreme disappointment after many failures as follows: "I lost my confidence completely and became disappointed because I would never be able to communicate like a local" (Alex). Eventually, this graduate decided to seek employment at a co-ethnic company. However, after some years, they became tired of working with colleagues from the same ethnic community because they felt unsatisfied with what they had gained from their work. Accordingly, they quit their job and applied for a new role at a small local firm. They cited the main reason as wanting to continue their original dream of working in the mainstream environment, as follows:

> As an international student here, I wanted to be proud of myself: not necessarily for receiving a high salary, but for many other reasons. For example, I wanted to show my friends [in China] what they did not know. However, during my 3 years of work at that company [a Chinese firm], I met Chinese people and ate Chinese food every day. I did not see anything new. (Lang)

This finding supports that of Pham (2021b), who found that international graduates desired to improve their communication skills not only to be able to integrate into local society and better perform their work but also improve their personal qualities. Further, Li (2013) found that although employment was important to international students, many desired to improve their *Suzhi*: a concept that relates to whole-person development.

However, the limited opportunities for the participant to learn a new culture at their co-ethnic company resulted in their realisation of a new range of issues that were associated with the embodied aspects of communication. For example, they were not confident whenever they had to dine out with customers because they had little knowledge of where to find suitable restaurants and the types of food and drink that local people liked. They felt especially uncomfortable when joining in small talk in the workplace because they did not have knowledge of the types of topics or the ways in which to engage with local colleagues. Another graduate revealed: "I feel really ashamed. After many years living in this country, I realise that I know nothing about Australia. I am no better than a new international student" (Li).

These findings reveal the multifaceted aspects of how the international graduates' work environments could impact their communication competence. It is clear that these aspects went beyond their linguistic capacity. Instead, it was evident that subject-centred sociocultural factors such as identity drove the way that the graduates engaged with developing and using their communication skills (Eteläpelto et al., 2013). Moreover, these impacts were reflected in both the short- and long-term career journeys of the graduates.

Importance of Living and Work Experiences

The data analysis revealed that while most of the graduates improved their English proficiency in their study programs, there were also some exceptional cases in which

some graduates wanted to enhance their English proficiency to a native level. Notably, these graduates expressed that they wanted to enhance their communication competence not only because they wanted to integrate into the local society and better perform their work, but also because they desired to improve their whole-person development (i.e., enhance both their social and personal identities) (Archer, 2003). In the results, two graduates stood out because they had a high level of communication skill, which included both English fluency and a wide knowledge about the Australian working culture. The two graduates shared their strategies as follows:

> The language required for daily communication differs from the language required for the job. … We need to show our employers our expertise and knowledge through our use of terms and terminologies. … I mean using language depending on the context. (Wu)

> Your image on social media is important, so you should be careful with what you post. (Daniel).

Here, the former graduate emphasised that the language required for employability must be contextually appropriate, so they tended to read and watch the news that concerned their disciplinary study and take note of terms and phrases that they could imitate. This practice enabled them to overcome language barriers and successfully run their business. Meanwhile, the latter graduate, who worked as a director of a finance start-up, highlighted the importance of maintaining a good image on social media, as companies often use this as an informal selection tool. Both Wu and Daniel demonstrated the capacity to intertwine the processes of developing communication competence and building identity capital. The types of language and information that they shared both verbally and virtually presented employers and clients with wider narratives regarding their self-identities and capacities in order to add value to an organisation.

The study data also revealed several graduates who had very skilfully used social networks to both enhance and navigate their communication limitations. For example, several observant graduates shared tips for using social media, such as Facebook and LinkedIn, to learn about dialects and local culture, which they then applied to their daily conversations. They noticed that their local colleagues shared stories and photos about nature, bush walking, work, and politics, whereas the colleagues from their home countries often shared photos of themselves eating and cooking, so the graduates used this information to adjust their topics in daily conversations. The analysis also revealed that these graduates particularly engaged in self-reflection and observation so that they could choose embodied cultural norms. Those who achieved better improvements and were more satisfied in their communication competencies were those who had work and living experiences in Australia. Their real-life experiences allowed them to reflect on how what they had learned in universities differed from reality, and how to adjust.

Conversely, the graduates who could not improve their communication competencies were often those who lacked these experiences, and they often faced the sense of feeling stuck. They found it both confusing and difficult to decode embodied cultural values in the labour market. For instance, a graduate expressed their feeling

of depression when experiencing how "professionalism" was applied at their workplace in a way that was entirely different from that which they had learned at university. The discourse at university and in the labour market are different, and without the experience of an insider, international graduates often find it difficult to transfer the knowledge and skills obtained at university to the workplace (Pham, 2021b). The current study also found that who did not have work experience often failed to use "legitimate language", and they divulged a sense of difficulty in obtaining the right knowledge, appropriate communication skills, and sensitivity to cultural differences in order to develop natural and smooth conversations in the workplace. For example, some shared that they struggled with the "proper" behaviours, shared interests, and values when conducting conversations with colleagues. They often experienced accidents, described by Millet (2003) as "hitting an iceberg". Consequently, some graduates felt left out and failed to engage their colleagues in small talk to build working relationships. Such failures were not necessarily due to limited English proficiency but concerned different preferences and "ways of doing things". As reiterated by Mandy:

> I do not know what I should talk about. … They talk about walking the dog, surfing, and having barbecues. They then think my English is not good enough. When they formed a project team, they excluded me because they thought I was not sufficiently capable. (Maddy)

Maddy did not know what her colleagues' preferences were because to identify this embodied cultural point, she had to accumulate the relevant understanding through inculcation and assimilation (Bourdieu, 1986). It appeared that the graduates that had stayed in the host society for a long period and were actively involved in mainstream society were more likely to be able to pick embodied cultural norms and be more confident in their social interactions in the workplace. A graduate who was working as an academic shared their experience, "Yes, you need to stay here, but more importantly, you need to be engaged in society. One year of working as a tutor taught me much more than 5 years of living here as a student" (Cheng).

Discussion and Conclusion

International students' language problems are commonly viewed as a consequence of their low English proficiency upon entry level to higher education. The Australian Universities Quality Agency (AUQA), which develops English language standards for higher education, asserts that providers must ensure that students are sufficiently proficient in English to enable their effective participation in higher education studies upon their program's commencement (Leask, 2004). However, Wingate (2015) found that the admission requirements in themselves insufficiently accounted for the proficiency of international students' communication skills upon completion of their studies. Moreover, satisfactory IELTS test scores did not guarantee international students' effective and smooth communication skills (Barton et al., 2017).

To help international students to address their language barriers, Australian universities have adopted a common practice of providing English language support services (Barton et al., 2017). However, Murray and Arkoudis (2014) found little evidence of these services' effectiveness. There are various reasons for this. First, academic or content teachers do not pay enough attention to this type of student support because they consider teaching communication skills to be outside of their area of expertise and their job description (Dunworth & Briguglio, 2011). Second, students tend not to attend these extra services because they are busy with their disciplinary studies. Recently, a small but increasing number of studies have argued that skills in English as a second or additional language (ESL/EAL) need to be developed through students' efforts and/or deliberate interventions in teaching and learning (Murray, 2010). The literature is unequivocal in arguing that high-impact student learning occurs when communication skills are integrated and embedded within disciplinary learning and assessment (Arkoudis et al., 2012; Wingate, 2015). However, as the current study reports, communication skills needed for employability must include a wide range of competencies, such as linguistic or grammatical, discourse, actional, sociocultural, and strategic factors. Limitations in communication competencies do not often come from the international graduates' limited linguistic skills, but instead are from their unfamiliarity with, what Puwar (2001) terms, their "subtle codes" (e.g., norms, values, behaviours, and identities). Therefore, students are unable to speak in a "normal" or "acceptable" manner in particular social contexts.

This study's findings revealed a range of sociocultural factors that influenced how the international graduates developed and utilised their communication skills. Among these factors, the international graduates stated that joining and engaging in social interactions had a profound impact on their language confidence and, in turn, on their communication performance. When the international graduates could not understand the expectations of the colleagues they were communicating with, they became confused and often asked seemingly "odd" questions. This is because many local workplace values and practices differ to Asian values (Pham, 2021c). It was also noted that the international graduates' ability to recognise subtle codes in order to perform "acceptable" behaviours was premised on them being active, observant, and reflective in the workplace, because many of these "soft" aspects cannot be taught by their host institutions. This also meant that the predominant skills-based approach—which emphasises the enhancement of communication skills through English tests such as IELTS, additional language support services, and embedding language within the disciplinary study—was inadequate to prepare the international graduates for employability. Therefore, this study deems that the time is ripe for a better integration of the shared-responsibility approach. This initiative should invite international students to take more responsibility for developing their employability by becoming self-learners in a real-world context so that they can observe, experience, and absorb these "soft" aspects. Adopting a shared-responsibility approach would request a higher level of agency that international students need to exercise so that they could manage their career and might weaken universities' reputations but is far more realistic for preparing international students to commence their post-study

journeys. Pham (2021c) found that when international graduates exercised agency by continuously reflecting on past experiences, envisioned short and long futures, and worked on possibilities for present actions, they were more likely to be able to manage their employability trajectories and have better chance for success.

As such, the current predominant deficit perspective that sees international students as "inferior others" who have struggles and need to go through a process, as described by Marginson (2014), of "adjustment" or "acculturation" to Western evaluation and expectations is questioned. In fact, an increasing number of researchers have critiqued stereotypical assumptions about international students by acknowledging that this cohort could exercise agency in managing their studies and career (Marginson, 2014; Pham & Jackson, 2020; Pham et al., 2019; Pham, 2021b; Tran & Vu, 2018). These researchers emphasised that international students know how to use agentic dispositions and actions to strategies resources both carried from their home country and articulated from the host country. There should be more research that explores capacities that international students possess and may develop to overcome challenges. This line of research would enable international students to better manage their career trajectories in the host country.

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Chapter 6
Challenges Associated with Employability Capitals Facing Chinese International Graduates in Australia

Melody Tang

Abstract This study aimed to unpack the challenges facing Chinese international graduates in achieving positive employability outcomes and their responses to the challenges in the Australian labour market. It has been found that graduate employability is determined by the following capitals: human, cultural, social, identity, psychological, and agentic capitals. Many studies have explored the challenges facing international graduates in the host labour markets, but little is known about the challenges associated with the employability capitals listed above. This book chapter deploys a qualitative approach to explore the challenges associated with employability capitals facing Chinese international graduates in Australia and their responses to these challenges. Fourteen Chinese international graduates participated in in-depth interviews. The findings revealed that, first, challenges associated with the six capitals intertwined with each other; second, challenges worked as triggers for participants to develop and build capitals by exercising their employability agency; and third, the challenges faced by participants were temporary. This study argued that more research is necessary to explore how international graduates negotiate their long-term employability trajectories.

Background

The employability of international graduates has also become a significant concern for all stakeholders in the host country, because post-study career prospects are one of the key factors determining where international students choose to study (Pham, 2021a). According to the Organisation for Economic Co-operation and Development (2020), Australia is the second most popular destination for international students with 8% of the entire international student population, next to the United States with 18%. International students have also made a significant contribution to many aspects of Australia's society (Pham, 2021a), including a significant

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contribution to Australia's economy and jobs creation (Pham, 2021a). Therefore, enhancing international graduates' employability is critically important to Australian higher education. Australia recognises the importance of international education and supports enhancing international graduate employability. Universities have implemented various initiatives to support students' education-to-work transitions (Department of Education and Training, 2016). The Australian Government has launched different types of visa schemes to help international students remain in Australia after graduation and find possible employment opportunities (Australian Government, 2016; Pham et al., 2019; Tran et al., 2019).

However, there is a large gap between the high popularity of Australia as the destination of international students and their employability outcomes in Australia. Only 44% of international graduates were employed full-time (Chew, 2019), whereas 71% of domestic graduate obtained full-time employment in the same year (GradStats, 2017). Additionally, international graduates had difficulties in securing a job in their field of study, instead performing low-skilled jobs and volunteering positions (Chew, 2019; Tran et al., 2019). Chinese international students represent the largest proportion of all international students in Australia and contribute the largest proportion to Australia's education export income (Deloitte Access Economics, 2016). Amongst all international graduates, Chinese international graduates represented the lowest rate of employment under the post-study visa scheme (Chew, 2019). There has been limited research exploring what contributes to this gap in employability outcomes for Chinese international graduates in the Australian labour market. To understand the mechanisms responsible for this gap, this research aimed to unpack the challenges facing Chinese international graduates in achieving positive employability outcomes and the responses to those challenges. The chapter begins with an examination of the current literature on the challenges facing international graduates in Australia. It then details a capitals-based approach as the conceptual framework in understanding the challenges faced by international graduates in Australia. The methodology, findings, and discussion and conclusion are then presented.

Challenges Facing International Graduates in Australia

The previous studies have reported a range of problems facing international graduates including Chinese graduates, attempting to start and develop their careers in the host country (Blackmore & Rahimi, 2019; Blackmore et al., 2014; Blackmore et al., 2017; Jackling & Natoli, 2015; Pham & Jackson, 2020a, 2020b; Pham et al., 2019; Tran et al., 2019). These problems can be categorised into three levels: macro-, meso-, and micro-levels. At the macro-level, international graduates' employability is influenced by the structural factors relating to governmental policies, economic situations, and the uncertainties of particular industries. International graduates' employability trajectories are often affected by the changes to migration policies. International graduates were found to have to leave Australia after completing their studies and gave up using the obtained degrees for permanent residency (PR) application because their

disciplines had been removed from the Migration Demand List (Pham & Jackson, 2020a).

Additionally, the post-study work visa has been found to be too short, giving employers' little confidence when hiring international graduates (Tran et al., 2019). The inability to extend the post-study work visa makes it even more challenging for those two-year visa holders, giving them limited time to prepare for their PR application (e.g. professional year programme, National Accreditation Authority for Translators and Interpreters certificate), gaining working experience, and developing employability (Blackmore et al., 2017; Tran et al., 2019;). Similarly, diminishing full-time jobs and limited graduate positions amongst an oversupply of graduates makes it challenging for international graduates to realise optimal employability outcomes (Pham & Jackson, 2020a). The coronavirus pandemic has exacerbated the host labour market for international graduates in Australia with economic recessions, rising unemployment, and heightened job competition (Tran et al., 2020).

At the meso-level, international graduates' employability is influenced by parents, employers, and higher education institutions (Pham & Jackson, 2020a). Some international graduates struggled to make progress in their chosen disciplines, because to please their parents, they followed their parents' thoughts even though they did not have a genuine interest (Pham & Jackson, 2020a). The reluctance attitude of Australian employers to recruit international students also acts as a barrier for international graduates to enter the graduate labour market (Blackmore et al., 2014; Pham et al., 2019). Employers often have preferences to recruit candidates with similar backgrounds and shared culture and values (Blackmore et al., 2017). Additionally, employers' unconscious bias against international graduates makes it challenging for them to be recruited, even though employers agree with workforce diversity (Blackmore & Rahimi, 2019). International graduates also found it challenging to find internships or placements on their own when they are not offered work-integrated learning (WIL) programmes in their university courses (Blackmore et al., 2017).

At the micro-level, the focus is placed on how international graduates themselves can develop and utilise their resources to navigate the labour market (Pham & Jackson, 2020b). The previous studies indicated that international graduates have difficulty proving their competitiveness and realise optimal employability outcomes for these following reasons: (1) international graduates have relatively weak English proficiency that hindered international graduates from receiving job offers (Pham et al., 2019); (2) international graduates' professional skills (especially communication) do not meet employers' expectations (Blackmore & Rahimi, 2019; Jackling & Natoli, 2015; Pham et al., 2019); (3) international graduates lack of relevant local work experiences making them less competitive (Blackmore et al., 2014); (4) international graduates are disadvantaged in local social networks, which limits their opportunities for employment because international graduates tend to cluster with co-ethnic groups (Pham et al., 2019); (5) international graduates have difficulty in decoding the cultural rules of an organisation (Pham et al., 2019) and demonstrating their cultural fit to the organisation (Blackmore & Rahimi, 2019); (6) international graduates have high expectations for post-study employment and are unaware of the difficulties in securing work in their field after graduating (Blackmore et al., 2014);

and (7) international graduates do not have a clear career goal, which hinders their career progression (Tang, 2020).

The findings of the previous empirical research on Chinese international graduates in Australia (e.g. Blackmore et al., 2017; James & Otsuka, 2009; Tharenou, 2015) showed a resonance between the challenges faced by Chinese international graduates and those by the international graduates in general at the macro-, meso-, and micro-levels. Specifically, these challenges are as follows: (1) struggling to find relevant work experience in Australia (Blackmore et al., 2017; Tharenou, 2015); (2) insufficient English language proficiency in writing and speaking (Tharenou, 2015); (3) difficulty in getting a full-time job because they do not have PR (Blackmore et al., 2017; Tharenou, 2015); (4) hardship expanding networks beyond the Chinese-speaking community (Blackmore et al., 2017); (5) inability to quickly identify, learn, and adjust to the changing "rules of the game" and adapt their professional goals accordingly (Blackmore et al., 2017); and (6) subtle forms of discrimination in recruitment (James & Otsuka, 2009).

As discussed above, international graduates, including Chinese international graduates, have encountered a range of problems related to various resources and capabilities when negotiating their employability in the Australian labour market. The current literature is dominated by research exploring how the factors at macro- and meso-levels influence international graduates' employability (Coffey et al., 2021; Pham et al., 2018; Tran et al., 2020), and how international graduates' employability needs to be improved at the macro- and meso-levels (Cameron et al., 2019; Tran et al., 2019). Although this line of investigation is important, more studies need to be conducted on the micro-level—that is, what strategies international graduates can apply to negotiate employability and achieve optimal employability outcomes (Pham et al., 2019).

Additionally, research and higher education have primarily focussed on preparing graduates for the development of human capital in terms of professional knowledge and professional skills (Pham & Jackson, 2020b). A skills-based approach and WIL programme are the employability-related initiatives implemented by Australian universities. However, many have criticised the ineffectiveness of current employability programmes. First, the skills-based approach has been criticised for the mismatch between employability skills expected in the labour market and professional skills taught in university (Pham & Saito, 2019). Second, WIL has been found limitations in terms of the short time to develop their skills, lack of WIL opportunities, and complexity of collaboration with industries (Pham & Jackson, 2020b). Increasing evidence has been found on the significance of the six employability capitals (human, social, cultural, psychological, identity, and agentic) and their ability to address the ineffectiveness of employability initiatives implemented in universities. These six employability capitals are elaborated in the next section. However, there is a significant dearth of research on how these six employability capitals would address the challenges international graduates confront.

Therefore, this study aims to further this line of research by exploring Chinese international graduates' employability in Australia, specifically, at the micro-level. It

analysed the challenges associated with six employability capitals and their responses to deal with the challenges. This study was guided by these two research questions:

1. What are the challenges associated with the employability capitals (human, social, cultural, psychological, identity, and agentic) facing Chinese international graduates in Australia?
2. How have Chinese international graduates responded to these challenges?

Conceptual framework—A Capitals-Based Approach

This study deployed a capitals-based approach (Pham, 2021b) to explore challenges international graduates face at the micro-level. This capitals-based approach is built on Tomlinson's (2017) graduate capital model. Tomlinson (2017) and Pham (2021b) expanded Bourdieu's (1986) notion of capital by emphasising the need for graduates to develop and utilise six capitals for their employability negotiation. These include human, social, cultural, psychological, identity, and agentic capitals. This approach also provides a sociocultural perspective in understanding graduates' challenges and employability under the contextual, social, and cultural factors. The capitals-based approach is illustrated in Fig. 6.1.

Human capital is described as the professional knowledge and professional skills that graduates acquire as the foundation for career entry into a specified industry (Tomlinson, 2017). International graduates face a deficit in professional skills (especially communication) (Pham et al., 2019). Social capital refers to the accumulated networks and human relationships graduates have, which they can use to help mobilise their existing human capital and get closer to employment opportunities

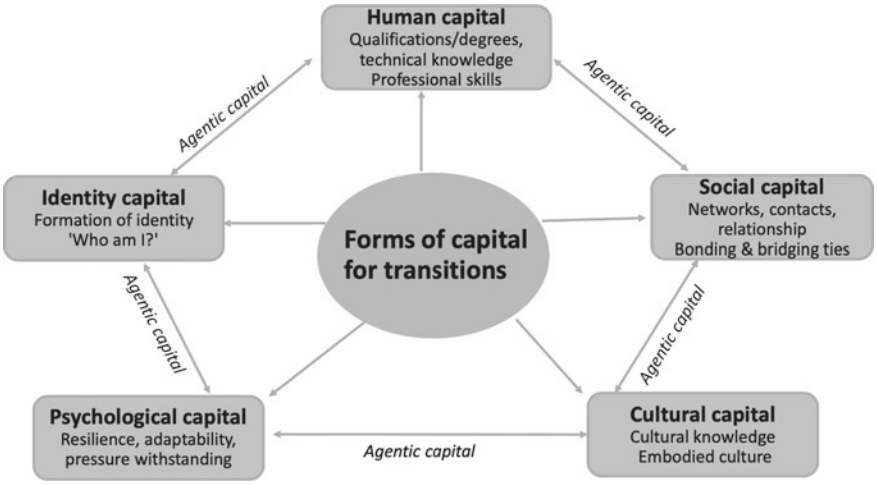

Fig. 6.1 A capitals-based approach (Pham, 2021b)

(Tomlinson, 2017). It is noted that international graduates faced with the challenge of improving English struggle to engage with the broader Australian community or developing local networks (Blackmore et al., 2017; Tran et al., 2019).

Cultural capital is the culturally valued knowledge and behaviours that graduates can use to demonstrate their cultural fit to a potential employer (Pham et al., 2019). International graduates unfamiliar with legitimate language (e.g. understanding subtle normative codes) have difficulties engaging their colleagues in small talks and building working relationships (Pham, 2021a). Psychological capital refers to the personal attributes of graduates and their capacity to adapt and respond to inevitable career challenges proactively (e.g. under-employment, unemployment, and job rejection) (Tomlinson, 2017). Unrealistic expectations upon graduation intensify the apprehension felt when international graduates face a reality check (Blackmore et al., 2014). Identity capital refers to graduates' capacity to develop emerging identities and then articulate a personal narrative that aligns to the employment domains they seek to enter (Tomlinson, 2017). International graduates with an unclear goal and no passion for their job struggled to make progress in their career development (Tang, 2020).

Agentic capital refers to the agentic features and actions to develop strategies and effectively use various resources (Pham, 2021c). Agency has been explored in various fields (Archer, 2000; Bandura, 2001; Eteläpelto et al., 2013; Giddens, 1984; Marginson, 2014), but it remains limited in understanding how international graduates use their agency in negotiating employability (Pham, 2021c). Pham (2021c) made the first effort to conceptualise the employability agency of international graduates, which can be both constrained and resourced by five components including contextual structures (e.g. global recession, migration policies, visa policies, regulation), subjectivities (e.g. identities, interests, aspirations, commitments), host country resources (e.g. work and living experiences), ethnic capitals (e.g. ethnic community, ethnic networks, language, ethnic habitus), and agentic features and actions (Pham, 2021c). The capitals-based approach focusses on one component—agentic capital in terms of agentic features (e.g. belief, confidence) and actions (e.g. active engaging). This capitals-based approach guided the design and the data analysis of this research.

Methodology

Participants

With ethics approval obtained, fourteen Chinese international graduates were carefully selected to ensure diversity in terms of gender, age, highest degree, discipline, graduation length, employment status, visa status, and current location (see Table 6.1). They were invited from a larger sample of 345 responses to an online survey in which they expressed their interests in participating in in-depth follow-up interviews. This study used the qualitative data from interviews only because in-depth

interviews enabled the author to probe the challenges, the participants had and how they responded to those challenges. Their responses were kept confidential, and pseudonym was applied. The participants met the following selection criteria: (1) they are originally from China; (2) they came to study in Australia as an international student; (3) they obtained a degree(s) in Australia (bachelor's, master's, or PhD); (4) they had working experiences (via an internship; voluntary work; casual, part-time or full-time employment; or being self-employed) in Australia. This study does not attempt to offer a representative sample of all Chinese international graduates in Australia. Nevertheless, it provides insights into the challenges associated with six capitals and their responses to the challenges.

Data Collection and Analysis

Semi-structured interviews were conducted to collect data from each participant. Interview sessions and locations (online or offline) were scheduled based on each interviewee's preference and convenience. There were 14 interviews in total, and each participant signed the consent form before the commencement of the interview. Interviewees were asked to share experiences related to their work journeys to address the research questions for this study. The interview questions were adapted from the interview responses and findings reported in the previous studies (e.g. Pham & Jackson, 2020b; Pham et al., 2019; Pham, 2021a). Exemplar interview questions were: "what are the impressive challenges or main difficulties you have encountered during your work journeys in Australia so far?" and "how have you responded to these challenges?" Each interview lasted approximately between 50 and 60 min and was recorded for transcription. Interviewees were free to respond in either English or Chinese to express their ideas during the interviews. The author then translated four interviews from Chinese to English.

Thematic analysis was applied and was mainly theory driven. Both predetermined codes and generative codes were generated (Braun & Clarke, 2006). The analysis began with the author reading and re-reading the interview transcripts word by word until a clear understanding of each participant's work journey in Australia was reached. The deductive thematic analysis was applied manually and was mainly theory driven. The author started with a predefined set of codes that come from the literature of graduate employability, specifically the capitals-based approach. The six capitals and the sub-dimensions of each capital were set as the predetermined codes, and the predetermined codes were assigned to the data (participants' quotes) during the analysis. The research questions guided the thematic analysis in terms of challenges and responses. New codes were generated when the data did not fall into one of the six capitals or of their sub-dimensions.

Table 6.1 Demographic details of the 14 Chinese international graduates who completed the in-depth interviews

Variable	Sub-groups	*N*
Gender	Male	7
	Female	7
Age	18–23	1
	24–29	6
	30–35	5
	36–41	2
Highest degree	Bachelor's degree (coursework and honours)	2
	Master's degree (coursework and research)	10
	Ph.D. degree	2
Graduation length from the first degree	0–1 year	6
	1–3 years	1
	3–5 years	3
	5–10 years	2
	More than 10 years	1
Discipline (multiple disciplines are applicable)	Non-STEM (e.g., business, accounting, finance, logistic & supply chain management, education)	11
	STEM (e.g., IT, engineering, biomedicine, biotechnology, psychology, optometry, speech pathology)	11
Employment status (multiple statuses are applicable)	Employed full-time	6
	Employed part-time	2
	Employed causal	4
	Unemployed looking for work	1
	Study (doing PhD)	2
	Self employed	1
Visa status and location	PR/Citizenship in Australia	4
	Non-PR/Citizenship in Australia	8
	No visa in China	2

Findings

Human Capital: Qualification, Professional Skills, and Working Experience

One challenge concerning human capital is the usefulness of qualifications obtained in Australia. The usefulness of participants' qualifications on obtaining full-time

employment in their field of the study varied across the disciplines. Participants from disciplines in psychology and teaching emphasised the significance of their qualification to obtain a full-time employment. These participants worked as speech pathologists, psychologists, and early childhood educators, pointing out that it is crucial to be qualified and registered before entering the labour market. However, participants from other disciplines had difficulties receiving full-time jobs in their field of the study because they lacked the relevant working experience as required by employers, even though they obtained the qualification from Australian universities. Some participants shared,

> I do not think my master's degree is helpful for me to apply for jobs, because I did not have much background or working experience in coding. So, although I have my IT master's degree, employers still look for my working experiences in this field. (Yolanda)

> With my qualification, it is relatively easier for me to get a contract of causal job in Australia, but if I want to get a full-time job, that is another storey. Most employers prefer experienced software engineer, there is a high demand of senior software engineer. But the graduate positions for junior levels are very limited. (Jason)

Participants responded to these challenges differently. Two participants accepted PhD offers and accepted causal positions as research assistants. Some participants elected to begin with volunteer work to accumulate relevant working experiences. Some participants worked in other industries to strengthen their professional skills. Another challenge to human capital is demonstrating satisfactory professional skills. Participants talked about the transition from being a student in university to a worker in a company, especially regarding the requirement for high attention to detail and critical thinking. Participants shared their learning process from their working experiences in building professional skills by reading their supervisor's comments, self-evaluating, and self-reflecting. Therefore, participants needed to overcome the challenge in acquiring working experiences, as working experience is not only essential to build on their qualifications when job hunting. It is also significant for participants to strengthen their professional skills.

Social Capital: Converting from Social Networks into Social Capital

Participants noted that the challenge was to convert their social networks into social capital within a short period of time. First, participants expressed that although it was easier to develop friendships with other Chinese people, the support from the social networks from the Chinese community did not come automatically. Several participants shared their experiences of building the good relationships and true friendships before they were referred to or introduced to potential employers by their Chinese friends, and one shared,

> The friendship just naturally happens when we hang out regularly and support each other in the difficult time. We also share information about job opportunities. She introduced me to

> her boss because she knew me very well. We have the rapport and trust which was not built just overnight. (Lilian)

Second, when developing the social network or making friends with the local community, some of the problems that participants faced included not being confident in using English, possessing limited cultural understanding, and being suffering from self-doubt. One participant shared,

> It is the cultural barrier and the language barrier. I can be quite sensitive to myself and think, okay, maybe local people are not interested in me, and they may not want to interact and socialise with me. (Jenny)

However, after one year, Jenny managed to make two Australian friends and maintain regular contact with them in building friendship over one year, before one of them introduced her to a potential employer. Therefore, to convert their social networks into social capital within and beyond the Chinese community, participants needed to overcome the challenges such as language, cultural knowledge, rapport, and time.

Cultural Capital: Converting from Cultural Understanding to Cultural Capital

In many cases, participants met the challenge of acquiring cultural knowledge, particularly the language required to understanding subtle normative codes, demonstrating appropriate communication skills, and sensitivity to cultural differences. First, participants expressed that it was relatively easier to acquire shallow cultural knowledge about companies by searching their profiles online or by observing how other colleagues work and behave at workplaces. However, it took time for participants to become familiar with the workplace language, especially regarding hidden rules or subtle normative codes. Second, participants with cultural understanding did not culturally fit in the workplace automatically, as there is a difference between cultural knowledge and actual cultural fitting. Yolanda shared her experience as a part-time worker:

> Although I can behave properly in the workplace, it does not mean that I can fit in the workplace. By saying fit in, I mean, I want to be like the local colleagues, they can chat and joke with each other whilst working, but I cannot do that and am far from doing that. And I think only after I can do that, the colleagues can accept me more and know me better. (Yolanda)

Participants shared different ways to respond to this challenge. Several participants actively engaged in team-building activities and observed for the daily communication to get familiarised themselves with the topics and Australian cultures. Additionally, local employers' discriminative practices were not experienced by all participants at workplaces. Some participants talked about accepting the cultural differences and being confident enough to share their Chinese culture as well. One participant

shared, "sharing Chinese culture actually makes me unique and makes other people in the clinic remember me" (Chole).

Psychological Capital: Be Resilient Proactively not Passively

The challenge of psychological capital emerged when participants had transitioned from being passively resilient to willingly and proactively resilient, flexible, and adaptative in response to career-related adversities. Some participants managed to cope with adversities by being resilient, willingly, and proactively, whilst others were resilient passively. The passive resilience was obvious when participants faced a reality check. One participant shared,

> I never thought it is so hard to get a proper job in Australia. I recently gave up on seeking for jobs in IT field. I had to be resilient and flexible and started with low-skilled jobs first. I just have no choice, because I have to make a living here. (Yolanda)

In contrast, proactive resilience was evident when participants used to be passively resilient but gradually became more capable of responding to a difficult time. One participant ran his own business after graduation and ended up closing the business because he could not afford the rent. He shared,

> It was almost 10 years ago, of course at that time, I was very fragile at the beginning, and I felt forced to be resilient as I had no choice. But now I have become more capable of responding to difficult time proactively. It just takes time, and it is very important to embrace the difficulties, learn lessons from the difficulties, adjust expectations, and set contingency plans. (Leo)

Proactively, resilient participants tended to have reasonable expectations of employment opportunities and had contingency plans. Several participants did not feel discouraged when they were not shortlisted for interviews or were rejected by companies because they knew they only applied for several companies. As such, they kept refining their resumes and applying for jobs.

Identity Capital: Form a Clear Career Goal

The challenge associated with identity capital is the process of forming a clear career goal, especially in realising the passion. Several participants changed their career paths because they realised their true passion and career aspirations. Three participants finished their bachelor's degrees but entered different disciplines for their master's degrees. These participants did not discover their real passion until they found they did not have a genuine interest and motivation in the bachelor's discipline when they were undertaking related works. One participant shared,

> My WIL experiences and other relevant working experiences about accounting were helpful, not in a way that helped me gain hand on working experiences or transit theory into practice, but in a way making me realise, I do not like it. I need to make a change. (Bowen)

Similarly, Yolanda gave up using her IT qualification to apply for PR and then chose to undertake another course in childcare. It was because Yolanda found herself uninterested in IT and did not do well when studying. Her unsuccessful learning experience and job-seeking experience in the IT field saw her discouraged and unmotivated. Consequently, she gave up IT that she was not good at and looked for other options to apply for PR. It is noteworthy that participants confirmed their passion when they started working. Bowen studied logistics for his master's degree because he developed and found his interest in the supply chain when he worked as a warehouse manager. Jason had a bachelor's degree in economics but changed to studying IT for master's and PhD when he was involved in IT-related work during his first job in a bank. Therefore, participants with vague or unclear career goals struggled to progress without passion for their chosen disciplines, leading to a change in career.

Agentic Capital: Active Engagement

The core issue concerning agentic capital was the level of agentic features and agentic actions. For agentic features, several participants perceived themselves as a marginalised group in terms of being a minority and were, therefore, less likely to take risks. One participant shared,

> I do not think I am a risk taker. And as international student, I have already got enough pressure, such as accommodation and budget. I would like to move out from the comfort zone, but I do not want to push myself too much. (Jason)

For agentic actions, Yolanda regretted not actively searching immigration policy herself, instead relying on her agent's information when choosing IT for her PR application. However, the information given by her agent was not holistic, which led to Yolanda struggling to learn a specialisation in which she was uninterested. Her unpleasant experiences in IT caused her to change her career path and undertake another course in childcare. She shared,

> This is the thing that I regretted so much. I should have engaged actively on my own in searching all the information. Like, if I searched all the information myself, then I would have known I actually can go with either early childhood education or social work. (Yolanda)

To respond to the lower level of agentic features and actions, participants engaged in self-reflection. Jason imagined alternative possibilities, considered his own preferences for the future and tested his acceptable level of risk by gradually moving out from the comfort zone. Yolanda learnt her lessons from the negative experiences in choosing the wrong specialisation and became more actively engaged in searching for important information on her own, rather than waiting for information from others.

Discussion

This study unpacked the micro-level challenges in achieving positive employability outcomes facing Chinese international graduates and their responses to those challenges in the Australian labour market. This study showed similar findings to some previous studies (Blackmore et al., 2017; Tharenou, 2015), arguing Chinese international graduates struggled to find relevant work experience in Australia. More importantly, this study revealed some new findings that contribute to understanding the challenges associated with employability capitals for Chinese international graduates.

First, the usefulness of Australian credentials cannot be realised when participants' work experiences is lacking. Second, the realisation of social capital requires more than participants' networks. Likewise, the realisation of cultural capital requires more than participants' shallow understanding of culture. Third, psychological and identity capital cannot be realised when participants do not engage in self-reflection about their life and work experiences. Finally, a higher level of agentic capital regarding agentic features and actions requires participants to actively engage in self-reflection on the past experiences.

As revealed in this study, the challenges associated with the six capitals are intertwined. It has been argued that different capitals are transmutable (Tomlinson, 2017). However, the transmutation from one capital to another capital does not automatically or always progress positively (Maclean & Harvey, 2008). In essence, a challenge under one capital can cause the challenges under another capital. The previous studies found that English proficiency (human capital) hindered international graduates from developing local networks (social capital) (Blackmore et al., 2017; Tran et al., 2019). The present study found that a lower level of agentic actions or active engagement (agentic capital) in selecting discipline of study caused challenging experiences when forming clear career goals (identity capital).

This study also revealed two important empirical themes in understanding Chinese international graduates' responses to the challenges. First, challenges also functioned as triggers for participants to develop and build capitals when participants negotiated their struggles differently by exercising their employability agency. From a perspective of considering international students as active agents (Marginson, 2014; Pham, 2021c), international graduates are able to control their circumstances because of agentic features (e.g. self-efficacy, sense of control) and agentic actions (e.g. active engaging, active selecting, initiate changes). Many of the participants in this study demonstrated strong sense of control and self-efficacy in changing in their career path and being confident to bring cultural diversity into workplaces. Additionally, international students are not habitually weak but are conscious and active agents in self-formation when responding to different circumstances (Marginson, 2014). Participants in this study engaged with self-formation based on their subjectivities in terms of one's initial motivation, expectation, personal values, priority at different stages, and identity commitment (Pham, 2021c). Participants did not complain about working for low-skilled jobs or voluntary jobs, because these working experiences

met their expectations of accumulating working experience, learning cultural knowledge, and improving their professional skills. Likewise, participants accepted PhD offers instead of entering the labour market, because they imagined alternative possibilities for the future. Therefore, participants' volition guided and motivated their actions to pursue a career that they value (Eteläpelto et al., 2013; Sen, 1999).

Second, the struggles and difficulties participants experienced did not last forever or remained unchanged. It has been argued that employability should be understood as a processual approach involving ongoing sense-making, self-discovery, and self-construction (Holmes, 2013). Many participants in this study appreciated the difficult times and challenges they had encountered in shaping their identities along with active engagement of self-reflection. Participants in this study experienced dynamic working journeys. They overcame their challenges, which furthers the argument that graduate employability cannot be measured by one-off short-term employment status upon graduation. Instead, it must be understood as a negotiation process involving ongoing changes (Holmes, 2013; Pham & Jackson, 2020a; Pham et al., 2019; Pham, 2021c). In the previous study, an international graduate came to Australia without knowledge in good academic writing and managed to be strategic in building an impressive publication record (Pham et al., 2019). International graduates have also faced difficulties building social interactions but managed to improve on their limitations (Pham, 2021a). This study reinforced these findings. Some participants once struggled to get interviews but can now select from multiple job offers. Many participants used to have difficulties confidently communicating in English but currently work in local companies with English-speaking settings. Other participants used to be unclear on their career goals but are now very clear about their career goals and career identity.

Implications and Conclusion

This study provides meaningful implications for current and future international graduates in understanding the challenges associated with six employability capitals at their level and how international graduates need to plan and develop strategies to navigate in the host labour market. This study also has implications for universities. It is essential for universities to embed both human capital and other five employability capitals in their teachings or employability programmes to better prepare international graduates' employability. Additionally, it is not enough to emphasise the challenges and problems international graduates face to achieve optimal employability outcomes. Further research is required to explore how international graduates exercise employability agency to develop and utilise capitals to achieve optimal employability outcomes in the host country. Such research also needs to investigate how international graduates negotiate their long-term employability trajectories and outcomes, not just focus on short-term employment outcomes.

In conclusion, this study unpacked the challenges, at the micro-level, associated with six employability capitals facing Chinese international graduates in achieving

positive employability outcomes in Australia. The findings revealed that, first, challenges associated with the six capitals intertwined with each other; second, challenges worked as triggers for participants to develop and build capitals by exercising their employability agency; and third, the challenges faced by participants were temporary. This study argued that more research is necessary to explore how international graduates negotiate their long-term employability trajectories.

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Part III
Workplace-Based Learning Development and Outcomes

Chapter 7
Learning in the Workplace Through Partnerships

Peter Seow, Chin-Fen Ho, and David Hung

Abstract This article examines how a partnership between schools and external organisation provide learning opportunities for teachers and other partners to develop new competencies and practices. The partnership was formed between a school, science centre, community social service agency and education research institute to design programmes to improve lower-track students science learning and well-being. Using a design-based implementation research methodology, the partnership sought to design, implement, and evaluate innovative tinkering-based science lessons iteratively while learning about the profile of the lower-track students. Over the span of three and a half years of the partnership, we documented the partnership process, meetings, lesson design and enactments, and interviews with students and partners. We found that the learning outcomes of the partnership included the development of skills for design, new practices and changed mindsets about failure which was facilitated by collectively building capacity in the partnership and developing the understanding of students. Through a social cultural lens of collaboration, context, and tools, we found that participating in partnerships can move members towards the development of knowledge, practices, and experience that they contribute to the growth of other members in culture of sharing, openness, and power balance.

Introduction

With the fast-changing landscape of the work environment, we are required to develop new competencies that are beyond our areas of training and work practice (Avis, 2010). It can be challenging for a person who has not undergone extensive training with practice to develop knowledge, skills, and aptitudes that would help them to acquire the competencies that would be useful for their areas of work. Teachers are no exception to this change. One example are teachers who have multiple roles which required them not only to teach, manage classrooms and design lessons, but also to attend to students' needs and social-emotional development, partnering with

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the broader community and stakeholders as we navigate ourselves in this complex education landscape of today. Though professional development programmes are provided for teachers to acquire new knowledge, it is known that one-off workshops are ineffective for teachers to develop practices that they would be able to integrate into their classrooms (Garet et al., 2001) and sustain the desirable outcomes. In Singapore's inclusive education approach, the education system has always sought to cater to the learning and well-being of all students, including the lower-track students in schools. As better outcomes in school and life are often associated with students who have high levels of well-being (Adler, 2017), teachers teaching lower-track students would need to understand their social-emotional needs of their students and provide experiences that would develop students' confidence, self-efficacy, and resilience. While professional development opportunities are ample, contextualised professional development opportunities where teachers get to learn and develop new practices such as designing experiences that would meet students' social-emotional needs in the context of the school are lacking. Therefore in this chapter, we proposed professional development learning in the workplace through collaborative partnerships. We envisage that a partnership with external partners with complementary and related practices can develop a culture that would create new practices and practical knowledge for each partner to adopt and adapt for their respective work. The partnership described in this chapter is based on the partnership between a teacher in a school, social workers in a community welfare services organisation, learning designers from the science centre and education researchers. The goal of the partnership was to design learning experiences for lower-track students that would pique their interest in science while attending to the social-emotional needs of these students. Over the span of three years of the partnership, members collaborated by learning to design and enact new science learning experiences, collecting data to understand students and iteratively improving the design of the learning experience. The approach focuses on developing new knowledge about students, creating science learning experiences for students, and attending to the social-emotional needs of the students. In the process, partners developed capacity to design meaningful science learning experiences that develop lower-track students' confidence and self-efficacy and strengthen their social-emotional competencies. We believe that a partnership model has a strong potential to foster learning within an organisation through collaboration with external partners. In the following sections, we describe the model and the process of our partnership journey through a sociocultural perspective by examining the tools, context, and participation of partners.

Literature Review

Social-Cultural Perspectives in Workplace Learning and Partnerships

Partnerships where there are multiple agencies engaged in co-operative relationships and mutual agreement in programme objectives with sharing of resources and responsibilities over time are becoming more common in business, education, industry, and government. Some examples of partnerships are public–private partnerships (PPPs) where private entities partner with government agencies to achieve a common purpose such as addressing environmental issues or a need in the community (Hodge & Greve, 2017). Another form of partnership is Research Practice Partnerships (RPPs), which researchers in academia form partnerships with practitioners in education such as school leaders and teachers to bring together their knowledge, experiences, and perspectives to solve problems of practice in the classroom (Tseng, 2017; Coburn & Penuel, 2016). Partnership with the diverse experiences, knowledge, and perspectives from different domains or industry can be opportunities for workplace learning for individuals who participate in the partnership. From a sociocultural perspective, the collaboration between partners, tools used to mediate the partnership, and context of the partnership can foster learning and development of individuals. For partnerships to work well, members must participate in collaboration and joint activities (Penuel et al., 2015). Through collaboration, individuals from different background, cultures, practices can contribute their expertise, skills, and experience to broaden the collective knowledge of members participating in the partnership (Henrick et al., 2017). Concomitantly, the joint efforts may develop new strategies and approaches drawing across different domains in the partnership work. Transformation takes place in individuals when they participate such as assuming more responsibility in the joint activity. The contributions of individuals influence the community of the practitioners and collective experiences can in turn shape and transform the individual. Participation can enculturate individuals to new forms of knowledge, beliefs, and practices because of partnership. Another aspect of sociocultural perspective is that context can play a significant role to allow new practices, concepts, and knowledge to emerge from a partnership. The broader cultural and historical setting that brought the partnership together individuals with diverse experiences across different domains can shape the interactions leading to the development of the partnership and individual. The development of the individuals needs to consider the broader social context of how the individual participates in the joint activities. The work of the partnership is mediated by tools and symbols such as the use of language, writing, diagrams, or drawings to facilitate co-construction of knowledge and development of practices (Jonassen & Rohrer-Murphy, 1999). From sociocultural perspectives, the discourse, norms, and practices that arise from the interaction and collaboration in the partnership inform how learning occurs among individuals as they mediate their personal meanings and meanings of the collective thinking among partner individuals.

Workplace Learning for Teachers

Workplace learning for teachers can be considered an overarching idea to include teacher professional development that comes in various forms and duration, whether it be collaborative planning, lesson study, action research or trainings through workshops, seminars, and conferences. Not only is teaching becoming the crucial school-related factors in association to student achievement (Schleicher, 2012), as Darling-Hammond (2017) highlighted, many high-performing nations are adopting professional learning opportunities afforded at workplace where teachers acquire deeper knowledge and develop skills about their work through collaborating and sharing expertise with others. Similarly, in any nation's education reform agenda, teachers are to continuously learn, unlearn, and re-learn their teaching practices, creatively construct new ideas of teaching in ways they have not experienced before, to keep abreast with the learning needs of students and the emergence of social changes (Nelson & Hammerman, 1996). This is especially evident since the spread of Covid-19 in year 2020, where normal routine and practices in schools were disrupted and educators were coerced into adapting technology to resume teaching and learning in ways that many have not experienced and imagined before. As we navigate our ways through these changes, one important question surface for our educators—"As much as we would like to prepare our students for their fast-changing world in the future, are we being prepared enough to demonstrate capabilities to take on challenges in shifting situations such as now?" This then has led us to rethink about the issue of effective teacher professional development in a timely manner.

Teacher professional development is not new to us, so is the gap between practice in school, involving tacit teacher's knowledge and the espoused theory (Eraut, 2000; Imants & Vee, 2010). There is a complex relationship between the bodies of knowledge and its relevant factors such as epistemological beliefs, political and economic influences, and context dependent. There is also inadequate empirical research of the current practice of teacher professional development (Borko, 2004) to inform the design elements and conditions for effective teacher learning even though the design, learning principles, and beliefs behind the programmes are reasonable and sound (Wilson & Berne, 1999). The purpose of teacher learning must focus on deepening their understanding of the processes of teaching and learning in relation to the students they teach (Darling-Hammond & McLaughlin, 2011). Little (2012) and Smith and Gillespie (2007) suggested combining off-site and on-site activity features in designing effective professional development programmes. Schleicher (2012) found these aspects useful in bridging the gap between the ideal learning environment and workplace application for teachers and building a high-quality teaching workforce:

- Professional development experiences that are continuous, allow time for inquiry, practice, feedback, and follow-up support, context-relevant and encourages collaboration
- Encouraging teacher ownership to become active agents of school change and not merely implementers of learning plans designed by others

- Developing a collaborative culture of research and reflection within school and outside school through partnership with stakeholders to improve teaching and learning, as Avalos (2011) described the process of "mediation", as structured or semi-structured form to facilitate teacher learning
- Continuous development of deep knowledge base of education
- Professional development is situated in the broader goals of the school's development and structure for evaluation and feedback

To affect deeper teacher change in practices and developing new mindsets about teaching and learning, Darling-Hammond and McLaughlin (2011) suggested contextualising professional development in teachers' environment to enable them to understand the complex relationships of teaching and learning in relation to their students and the learning environment through teacher participation. In other words, a participant-driven professional development that engages teachers in concrete tasks through iterative cycle of inquiry, reflection, and experimentation through a focus on the collaboration in the communities of practice than individual learning can be an effective approach for teacher professional development.

Study Background

Partnership Work

This study focuses on a partnership between schools, a community social service agency, science centre and an educational research institute to design and implement innovative approaches in science learning for lower-track students. The partnership gathers expertise from the areas of formal science learning, informal science learning and youth work to design participatory learning activities from a holistic development point of view, that not only aims to ignite students' interest in science learning, but also to address their affective needs in learning that is neglected in a typical classroom learning environment due to their complex and unique individual needs such as building confidence, competence, and social skills. In other words, this partnership adopts a relational approach in partnership development that emphasises close collaboration between schools and external partners to co-design and co-implement programmes that are targeted to the needs of the students, instead of the typical transactional approach where schools engage outside vendors to provide social services. Such partnership can also develop practitioner's capacity and professional practices that attend to scalability and sustainability of education innovations from the onset. Leveraging on the diverse expertise, partners can experiment ways to develop a learning model that integrates cognitive and affective learning needs when designing and implementing classroom lessons.

Model of Partnership

Over the period of the study, we developed the partnership implementation model as shown in Fig. 7.1. The model comprises three main components: (i) we have partners with their different roles and expertise they bring to the partnership in the design of tinkering activities, (ii) an outcome of the partnership was the design and enactment of the in-class and after-school tinkering activities which are experienced by the lower-track students, and (iii) the model revolves around the lower-track students as we designed the tinkering activities to develop their social, cognitive, and emotional competencies.

We adopted a learner-centred model where partners focused on designing and implementing new learning experiences through tinkering approach to meet students' developmental and learning needs. Students' response to the tinkering activities served as feedback to partners to inform and improve the design for the next tinkering experiences. There are two types of tinkering activities based on the context for implementation, (i) in-class and (ii) after-school tinkering activities. The in-class tinkering activities are embedded in the school Science curriculum and facilitated by teachers while the after-school tinkering activities are opt-in programmes facilitated by the science centre and social service agency staff. The partnership comprised of schoolteachers, youth workers from the social service agency, learning designers from the science centre, and education researchers. The diverse partnership brought together the domain expertise, experiences, and knowledge to design new learning experiences that would enable lower track to learn science and develop their social-emotion well-being through tinkering activities. For our school partners, they brought in their knowledge in school curriculum and linkages of the tinkering activities to

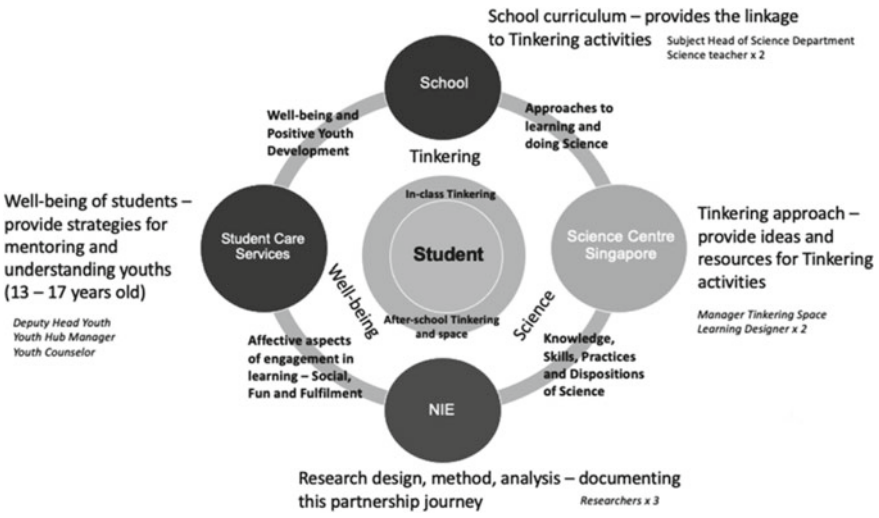

Fig. 7.1 Partnership model

science concepts taught in school. The science centre partners introduced tinkering as an approach to learning science based on the constructionist theory (Harel & Papert, 1991) that focuses on constructing artefacts of learning. The science centre team also provided practical ideas and valuable resources to support the partnership in learning about tinkering approach and developing tinkering activities. Youth workers with their experience and insights in mentoring youths provided views about learning through the emotional well-being lens and shared strategies to help partners to better understand the lower secondary students and their social-emotional needs. As for education researchers, they contributed to the research design, data collection and analysis from the iterative cycles of design and implementation, and prepared sharing about design changes to improve implementation with partners. In other words, the partnership collectively explored innovative approaches of learning and doing science, improved practices, and disposition towards learning science, addressed affective and social aspects of learning, and improve well-being and promoted positive youth development. Based on the implementation, the following sections will elaborate the aspects of the partnership, tinkering activities, and lower-track student learning.

Research Methodology

In this study, we used Design-based Implementation Research (DBIR) as a research methodology to understand the processes of partnership in designing learning innovations for lower-track students. As a methodology, DBIR is consistent with the aims of research–practice partnerships (RPP), where researchers and educators collaborate on solving problems of practice to improve educational outcomes in the classroom and overall educational system (Coburn & Penuel, 2016). DBIR is characterised by: (1) forming teams of researchers and practitioners that focus on persistent problems of practice from multiple stakeholders' perspective; (2) to improve practice where teams commit to iterative collaborative design; (3) as a strategy for promoting quality research and development process where teams develop theory related to both classroom learning, teacher learning in schools and through networks across schools, and implementation through systematic inquiry; and (4) DBIR is concerned with developing capacity for sustaining change in systems (Penuel et al., 2011; LeMahieu et al., 2017). The team-based iterative design approach to improve design and build capacity in partners in our study aligns well with the DBIR methodology. In our study, we were guided by the following research questions:

1. What are the outcomes of learning in the partnership?
2. How does the partnership foster learning among the partners?

Method

Participants

Participants in our 3.5-year study included partners and students at two Singapore Secondary schools. Both schools are in public housing estate but at separate locations in Singapore. Our partners included: (1) Learning designers from the science centre; (2) Youth workers from social service agencies (3) education researchers; and (4) teachers and allied educators from 2 secondary schools. There were 100 students from secondary 1 and 2 normal academic (NA) streams (aged 13–14) from 2 secondary schools participated in the study.

Data Collection and Analysis

Our data analysis included inductive and reductive processes to identify patterns, categories, and emergent themes as data was collected. Data collected from the study included audio recordings and field notes about partners' meetings in school, interviews with partners and students, observations of tinkering lessons, and partners' debriefing and reflection after the enactment of student activities. We triangulated data with multiple data sources of our findings or evidence such as students' learning experiences. We noted episodes where there were changes in the perspective of individual partners regarding their understanding of students, own professional practice, decision-making and contribution to the partnership such as ideas. As DBIR is an iterative approach, we identified and investigated themes that were emergent in the study with different instruments and analytical tools. At each iteration of enactment of the designed tinkering activities, researchers shared those findings with partners, obtaining different perspectives which in turn generated feedback as input for the next iteration of design.

Findings

What Are the Outcomes of Learning in the Partnership?

Develop Skills to Design

Through the partnership, partners developed the capacity to design and implement authentic inquiry-based lesson that allows lower achieving students to connect classroom science teaching to their daily life events, thus promoting better engagement in classroom learning. The diverse perspectives, experiences, and expertise of each

partner brought from their areas of practice to the partnership developed new knowledge on how we can develop the cognitive, social, and emotional competencies of lower-track students. As a result of the partnership, partners developed new skills that would enable them to meet the objectives of the partnership. For teachers, they developed skills to design tinkering lessons that could be integrated into their science lessons. Teachers are more inclined to designing traditional based lessons using direct instruction or structured experiments for science learning. After attending the tinkering workshops and observing two tinkering lessons conducted by the science centre, the schoolteachers proposed to adapt and implement the marble machine tinkering activity in the school classroom within the curriculum time. They embedded aspect of social-emotional learning, where students learned to collaborate, in the lesson structure of the tinkering activity. The lesson design was shared with the partners with the teachers soliciting feedback from the partners on the sequence of the activities. Teachers did consider the feedback on the design of the tinkering activities such as allowing time for students to visit different groups of tinkering products, be inspired, exchange feedback on the construction of their respective marble machines. In the subsequent tinkering lessons, teachers continue to design new tinkering activities such as exploring the path of light through different materials in building a light maze and investigating properties of heat by building the coolest building. In the following year, teachers continued to improve on the design of the tinkering and integration into the classroom lessons. Some of the improvements made was to allow more time for students to reflect on their science ideas as they were constructing the marble machine and to intentionally link students' prior knowledge of the scientific phenomenon to the tinkering activity they were experiencing. The skills that teachers developed continued to be sustained as the first group of teachers who participated in the partnership conducted professional development workshops for other science teachers in the school. Over the years of participating in the partnership, the teachers developed skills that would build capacity to design new learning experiences for their students through tinkering.

Produce New Practices from Knowledge of Students

The partnership produced new knowledge and understanding about students collectively which can lead to new practices. Respective partners may have had knowledge of students limited by the exposure afforded by their area of practice. Data collected from this study such as observations, students' survey, and interviews enabled partners to gain broader understanding of students and their learning through the perspectives of different partners. Partnership also provided opportunities for all partners to collectively construct new understanding about lower-track students through the design and implementation of tinkering activities and the iterative research design cycle allowed partners to continually reflect and refine their understanding about the students. For instance, partners found that it is important for students to choose their own partners during collaboration because they will choose who they think

they could work and learn well with. Through interviews, we found higher engagement during learning when students were able to work with their chosen partners. This new understanding on students' preference to choose their partners resulted in how teachers form groups for future learning. Previously, teachers would assign students to work in pairs and groups that they think would benefit the students, which sometimes resulted in conflicts and hampered the learning.

The partnership enabled partners to enrich their own practices. We found that partners appropriate ideas that are useful to enhance their practices in their own organisations. School teachers become more aware of the social-emotional needs of students during lessons. They are more mindful about providing emotional support to students through words of encouragement during the process of learning, besides giving importance to the cognitive aspect of learning. In addition, teachers' initiative and willingness to design and engage in in-class tinkering opened up opportunities to adopt a new practice. This process has become a professional learning journey as they navigated the tensions between the new and existing classroom practices and decided on a course that best suited for their school context. Some of the tensions experienced by the teachers relate to: (1) designing for fair allocation vs free exploration; (2) framing students' social engagement as copying ideas vs cross-pollinating ideas or inspired by other's ideas; (3) focusing on narrow curriculum goals or broader learning goals; (4) prioritising task completion vs experience of design activity; and (5) balancing between knowledge-focus and process-focus learning. The youth workers from the social service agency team who usually focuses on the social-emotional well-being of students through conversations, started to see the benefits of using tinkering in science as a platform to engage more students who visit their youth hubs. They even tried talking about science ideas explicitly in their usual cooking activities that focuses on cultivating essential life skills in students. Through the partnership, they realised that having some of the hub activities connecting to science ideas may not be as difficult as they thought and having this science element in the activities might demonstrate their care for students about their academics in addition to their well-being.

Changed Mindset to Learn from Failure

Through the participation in the partnership, there was a change in individual mindset to try, test new ideas and learn from failure. For most of the partners, particularly for teachers, there is an expectation for programmes to succeed. Understandably, they want students to have positive learning experiences and programmes to be carried out as smoothly as possible. However, this may create a risk-adverse mindset in teachers from implementing new activities for students as they are more concerned with achieving the learning outcomes and active participation instead of students' experience. In the partnership, we embraced a mindset of learning from failure and improve through iterative cycles of the implementation. We designed the tinkering activities as best as we could, but we could not ascertain how the students would

respond and participate actively in the tinkering activities. Over time in the partnership, the teachers were willing to try and innovative ideas and approaches to the implementation of tinkering activities. These ideas deviated from their usual practices and knowledge of how students would respond to tinkering activities. Eventually, the teachers became more open to the ideas from various members from the partnership and implemented them in the classroom to learn how students respond to the activities. When the school resumed after-school activities after the COVID-19 lock down, partners gathered to explore how the tinkering activities can be carried out in a blended approach with physical and online participation with the students, seeing that traditional learning approach is starting to evolve. Even though tinkering activities have been carried out in physically in the classroom, the partners were unsure how students may participate in an online environment. The teachers supported the idea of using a hybrid approach of physical and online environments to conduct the after-school tinkering activities even though they were unsure of how students will participate. The changed mindset of schoolteachers resulted in sustaining the implementation of tinkering activities in the school. They continue to design and implement tinkering activities by infusing tinkering approach into their existing science curriculum. In 2020, these teachers who had been partnering with us held professional development workshops for other science teachers in the school and advocated for tinkering to be included in the science lessons. As a result, the school has decided to expand tinkering activities to all classes including the classes from the other streams.

How Does the Partnership Foster Learning Among the Partners?

Building Capacity of Partners

The first attempt to design and implement tinkering activities was carried out at the science centre while the following activity was planned to be implemented in the school setting. The second cycle of the research design provided capacity-building opportunities for partners due to the change in context for the execution of tinkering in education, shifting from the science centre to school. This brought about the shift in the roles and responsibilities of various partners where teachers voluntarily assumed the lead in lesson design while the other partners acted as resource experts to support the teachers in adopting tinkering in school approach (Fig. 7.1). This approach (Fig. 7.1) emphasises equal attention to two other domains that constitute students' learning besides the usual emphasis on science content knowledge that include the tinkering philosophy—thinking with one's hands, and well-being—affective emotions in learning.

To build the competence of teachers and partners in understanding the tinkering approach, the science centre team explored a new workshop structure in this iterative research cycle. They customised their workshop to suit the teachers' needs as

tinkering lesson designer by providing a conducive environment filled with a variety of tools, materials, and mini exhibits for teachers to explore the science phenomena involved in their choice of topic for lesson design. On the other hand, the team from the social service agency suggested a simple 10-min technique to teach a well-being aspect explicitly, prior to the tinkering activity, to bring out the social-emotional focus of the learning model in this project. Providing authentic experiences during workshops in which partners have hands-on experiences to understand how students would experience the activity was an important aspect of the building capacity in partners.

Observing and Learning About Students

As the partnership formation matured, there was a shift in focus to designing and implementing tinkering programmes that met the needs of students with the intention to scale and sustain by the school. Partners participated in the learning design process and production of resources in attempts to align the learning objectives with the school curriculum through two trials conducted in the first year of our partnership. The learning activities were designed with the intention for students to learn science through tinkering with given resources while engaging their affective needs such as developing confidence. Partners observed students during the activity and shared their observations at the end of the activity. Post-lesson activities were conducted in school to consolidate student learning and connect to the Science curriculum. Research activities such as lesson observations, student survey, and student artefacts were conducted at different time points to help inform our subsequent design and implementation for further improvement. Improvements were made to the second learning activity based on the observations and analysis of the first activity. For example, we realised that students participated more actively in the post-lesson programme through group work than individual work to consolidate their learning experiences.

At this stage of the research, we see stronger evidence of students' voices as important feedback into the iterative cycles of design and implementation. Teachers became more open to explore less structured learning environment in classrooms that afforded more room for students to test ideas, fail and try again, and improve on their work, with increased students' agency in the learning process. It also became obvious that teachers gave equal, if not, more focus to the process of learning than just fixated on the learning outcomes that are usually content heavy, which is a norm in most traditional learning process in science subjects. Besides that, the aspect of well-being in learning, for instance students' feelings and emotions while learning, as well as soft skills such as collaborative efforts, were also interweaved into such tinkering activities. In this aspect, the teachers became more aware of the complexities of the learning process that varies among students and starting to adopt a lesson designer's role to create opportunities to develop students' capacity to explore, discover, reflect, and make sense of their own learning rather than the traditional method of downloading specific sets of defined knowledge to students.

Discussion

From sociocultural perspectives, the development in thinking and understanding in adults does not happen in vacuum but within the activities, experiences, through artefacts and, people with whom they participate together, as its meaning is echoed by Rogoff and Chavajay (1995, p. 866) "to understand individual thinking one needs to understand the social and cultural-historical contexts in which it is used". Therefore, this section will discuss how the consideration of Rogoff's (1995, 1997, 1998) three foci of analysis: participation, context, and cultural tools, can present a rich view of adult learning within a partnership activity in the discussion.

Participation

The learning in the partnership is through the transformation of practices where participants are responsible for promoting learning as they participate in the learning community (Rogoff et al., 1998). Learning happens through a developmental process over the course of the partnership when we observed the transformation in the understanding of the partners about students and capacity to design tinkering activities for students. Rogoff and Toma (1997, as cited in Robbins, 2005, p. 144) defined cognitive development as a collaborative process where people think together with others. In the first year of our partnership building, all partners including the schoolteachers, science centre staff, youth workers, and researchers focused on capacity building, that is learning about a new hands-on approach in science learning–tinkering, and broadening perspectives about lower-track students through a series of professional development workshops, regular design meetings, and student trial activities. In the second year of partnership, there were more structured plans put in place for the application of skills and knowledge acquired in the first year. The partners discussed how tinkering could be used for other science topics and several more activities were designed. As a result, this developed competencies to design tinkering activities for integration into science, particularly for the teachers. The participation and collaboration between the partners formed a community of learners where all the participants are active in contributing their expertise and knowledge, which leads to the transfer of ideas (Shulman & Sherin, 2004). For teachers, the partnership through a community of learners with partners from outside education disciplines afforded the opportunity to develop new Pedagogical Content Knowledge (PCK) where they can integrate new pedagogy of teaching science through tinkering, science content, and knowledge about students (Gudmundsdottir & Shulman, 1987). Teachers experience a transformation in their design capacity and enactment of science lessons as they engage in legitimate peripheral participation within the partnership, starting as novices to contributing and experienced members of the community (Lave & Wenger, 1991).

Context

As Rogoff (2003) highlighted, the development of people within a cultural community can only be understood considering their environment, characterised by their cultural practices and conditions. Though the research project was initiated by the researchers, partners' voluntary participation was anchored on a shared goal to improve lower-track students' interest and motivation in science learning. With the acknowledgement that these students have complex learning needs that encompass the cognitive, emotional, and affective domains which are a challenge to be addressed in today's classroom settings, we recognised the importance of having diverse expertise and experiences of partners and looked forward to a combined effort in contributing to designing a new way of learning science for the targeted students. The context of a shared goal in improving the quality of learning and well-being of lower-track students enabled the partners to work well throughout the duration of the partnership.

At the formation of the partnership, partners from different backgrounds, experiences, and organisations were invited. Thus, the partnership sought to create a diverse culture of learning about and from one another, communicating openly, building trusting relationships, and sharing openly about their perspectives. All these were important aspects of the partnership. Learning in the partnership was grounded as part of the social activity through workshops, sharing sessions and meetings in school (Lave, 1996). Partners took turn to share at different professional development workshops to help each other to understand their organisational practices, values, and the work they do, from their individual and organisational perspectives. As sharing sessions were supplemented by regular meetings for discussion about designing and implementation, a culture of sharing was practised and formed. Partners shared about challenges in implementation, difficulties to change mindset and usual practices, and negotiated new ways of thinking and doing within the practical constraints of the contexts. According to Lave and Wenger (1991), participating in social practices can lead a person to becoming a member of the community. As partners began to openly communicate with each other and build trusting relationships, the sharing sessions were imbued with values of respect and understanding, spirit of collaboration and attitude of flexibility that helped to guard against power imbalance. In other words, power balance was crucial for the development of a shared culture where each individual partner has negotiated his or her way to be part of this partnership. In contrast, organisational structures such as schools have an inherent presence of power structures that determine the nature of the learning community and the boundaries between members (Fuller et al., 2005). When the foundation of our partnership was set right, the transition into the application phase in the second year, followed by the scaling and sustaining efforts in the third year became smoother and seemingly seamless. Not that the transition was without its own set of challenges, but the shared ownership of the work we do together became a powerful motivation to overcome the challenges and sustain our efforts. For instance, partners came together amid the growing Covid-19 situation and conducted a science tinkering activity to a

small group of students in response to the school's request to help students to enjoy learning. We adopted blended approach that was new to everyone in their own practices, and though the learning curve for ourselves was steep, the partnership effort grounded by a supportive culture and co-construction was evident throughout the this trial tinkering activity.

Tools

According to Rogoff (1995, 1998), cultural tools including material and psychological assist people to make sense of learning. Daniels (2001) highlighted that psychological tool can be used to direct the mind and behaviour, whereas the use of technical tools can bring about changes in other objects, in Vygotsky's terms. These tools come in different forms such as language, visuals including drawings and diagrams, learning aids such as mnemonic systems (John-Steiner & Mahn, 1996; Stetsenko, 1999).

In our partnership, the use of language as a mediating tool was frequently observed (Gutiérrez et al., 1999). There was certain language used by experts in our partnership. For science centre team who specialises in the tinkering approach, they often quote "tinker" and "just try" that embrace the spirit of tinkering as a way of less structured learning, indicative of exploration. While this initially posed a significant challenge to experienced teachers' approach to a more structured way of learning in formal learning setting, it was observed that there was a gradual shift in the teachers' language and the way of organising tinkering activities in the second year of partnership towards more unstructured tinkering. The social service agency team who focuses on youth's emotional well-being often offer students' perspectives and feelings about design aspects of a lesson by asking "What would students think?" and "How would they feel?". This has helped to build our sensitivity towards students' social-emotional aspect while designing for lessons. As the research project adopted a student-centred learning model, related concepts such as student voices, choices, and agency were frequently brought up during discussions so that intentional effort such as simple decision to pair up with their friends were considered for lesson design. Furthermore, with scaling and sustainability in mind from the start of the partnership, researchers occasionally used phrases such as "more students to experience" and "more teachers to tinker" to remind each other of a shared goal for the continuation of this innovation.

Contributions and Conclusion

Partnership can develop new competencies and expand expertise to enhance employability of individuals in organisations. Our description of the model and process of partnership can contribute to the knowledge of workplace employability and learning.

From our study, participation in a partnership with diverse expertise and experience can contribute to the learning of individuals. Based on the social-cultural theory, learning through participation in the partnership is a collective process which highlights the social nature of learning. Unlike communities of practice (Wenger, 1998) which is often made of members from similar industry or areas of practice, a partnership comprising of varied expertise from different industries or practices can socially contribute to the learning of individuals. The nature of participation such as actively contributing ideas, knowledge, and expertise through interacting with others to design learning experiences and evaluate students' learning can help individual members to develop new practices and skills. It is important that individuals choose to participate and the extent of their participation in the partnership (Billet, 2001). Thus, a partnership should provide relevant learning opportunities and activities situated in the practices and contexts of the participants to enable them to develop new practices and knowledge relevant to their work areas (Lave & Wenger, 1991). A partnership can be considered an activity system with contradictions and tensions represented by the multiple voices of the participants with differing perspectives and expertise working towards a common goal (Engeström, 2001). Workplace learning through the partnership is an emergent process that is based on the context, participation, language, and tools used by the participants.

We argue that partnerships comprising of individuals from different organisations with varied experiences and practices can contribute to the development of knowledge, skills and practice of individual members, from a social-cultural theory perspective. First, an individual can develop new knowledge and competencies that can be found in the other related fields through a partnership situated in workplace practices. An individual when working with others outside the organisation on a shared goal can acquire knowledge and competencies that can be integrated into the workplace and be inspired to innovate and develop new practices. We have shown how teachers learn to design novel classroom learning experiences for students that would create interest in science learning and develop students' social-emotional needs such as confidence. Second, practices can be sustained because of changed mindset of the individuals when they participate actively in the partnership for a prolonged period of time. In the partnership process, partners developed and shared certain values, norms, and knowledge that result in changes in practice. For teachers, they embraced the collective ideas and internalised the practices to make their own in the classroom. This leads to greater sustainability of the new practices over time. Third, there is opportunity to scale the practices as individuals share their knowledge and ideas to other individuals in their organisations. The individual can be an agent of change to spread new practices that would enable an organisation to grow and expand. In the partnership, the teachers in the partnership held Professional Development workshops for their own and other schools to share about their design work and approaches to tinkering. Likewise, the social workers in the community hub adapted the ideas of the tinkering to create new learning experiences to meet the social-emotional needs of children in the community and at-risk students in schools. We hope that organisations would have the opportunities to mutually work with external organisations on shared goals that would offer individuals to participate

and learn. A partnership can be a driver for the development of new competencies and practices in individuals that would improve their skills and employability in the future.

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Chapter 8
Problem-Based Learning and Technology: Impact on Preservice Teachers' Motivational Orientations

Bee Leng Chua, Oon-Seng Tan, and Woon Chia Liu

Abstract Problem-based learning (PBL) is an inquiry-based approach to learning that requires students to be engaged with a real-world problem. PBL is underpinned by constructivist learning principles whereby learners will be intrinsically motivated as they are challenged and given autonomy to direct their own learning. In the COVID-19 pandemic teaching and learning landscape, there is an increasing need to harness the affordances of technology to engage students in their learning. In this chapter, preservice teachers are immersed in either a traditional PBL environment (tPBL) or an technology-enhanced PBL environment (ePBL). The focus of this study is to examine the effects of PBL (tPBL and ePBL) on preservice teachers' motivational orientations. The understanding of the changes in preservice teachers' motivational orientations after PBL (tPBL and ePBL) will inform teacher educators on how to improve on its implementation to enhance preservice teachers' motivation to learn. An understanding of how a constructivist pedagogical approach impact on preservice teachers' motivation to learn is pivotal as teachers role model and design learning environment to inculcate in their learners the motivation and passion to learn and become lifelong learners.

The COVID-19 pandemic has disrupted our life in unprecedented ways. In order to minimise disruptions to our daily activities, technology is used to ensure the continuity of schooling and work. This has accelerated the use of technology to facilitate students' learning and engagement. In addition, during this pandemic where fully online and blended learning are the predominant teaching approaches, it is pivotal for students to assume ownership of their learning and are intrinsically motivated to learn. As such, educators need to engage students in student-centred inquiry pedagogy such as problem-based learning (PBL) where learners self-direct and are active co-creators of knowledge. As mentioned, technology plays an increasingly important role in the classroom, it is thus of interest of PBL educators and researchers to examine how technology-enhanced PBL impact on learner's motivation. Teacher

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education allows preservice teachers to experience the pedagogical approaches they can use for their learners at the same time equipping them with pedagogical knowledge and skillset to be an effective educator. As such this study aims to investigate the effects of PBL and technology-enhanced ePBL on preservice teachers' motivational orientations. Understanding the changes in preservice teachers' motivational orientations after PBL (tPBL and ePBL) will inform teacher educators on how to improve its implementation to enhance preservice teachers' motivation to learn. In addition, it will also inform the design considerations of PBL and ePBL for preservice teachers to enact for the students in their classroom.

Introduction

Problem-based learning (PBL) is a pedagogical innovation where real-life problems rather than content trigger learning (Boud & Feletti, 1996). The experience of solving authentic problems engages students in an interactive cycle of collecting, connecting and communicating information (Chua et al., 2015). They activate their prior knowledge, acquire new knowledge, aggregate learning across different subject disciplines and develop cognitive skills, social emotional competencies and autonomous motivation to be self-directed learners and creative problem solvers.

In the current twenty-first century knowledge-based economy, with the advent of technology, huge amount of information is easily accessible through the Internet. Thus, it is not how much content we disseminate in the classroom that matters but rather the learning process that engages students' motivation, independent problem-solving and learning. However, more often or not, students lack the knowledge and motivation to conceptualise and critically analyse problems when doing independent learning or problem-solving (Savery & Duffy, 1995). Thus, as educators, we aim to design and facilitate learning environments that focus on solving real work challenges, develop cognitive and metacognitive strategies, self-directed learning and collaborative problem solving (Chua, 2013). PBL, a constructivist student-centred inquiry pedagogy is a viable learning approach to develop critical thinkers, effective problem solvers and motivated self-directed learner.

PBL and Social Constructivism

Constructivists believe that students are active learners constantly activating their prior knowledge, interacting with the environment and building knowledge (Savin-Baden & Major, 2004). According to Vygotsky (1978), knowledge building through social interaction is a key concept in social constructivism. Social interaction occurs first, leading to the development of knowledge and ability; all learning happens through social interactions with others whereby knowledge is co-constructed.

Learners then internalise this new knowledge through appropriation and reconstruction (Vygotsky, 1978, as cited in Walqui, 2006). In order to develop learners' cognitive structures to handle complex and difficult tasks beyond their current abilities, scaffolding by a knowledgeable other is essential to make these tasks manageable and within students' Zone of Proximal Development (ZPD). When students enter their ZPD, teachers provide higher levels of support at the beginning and gradually decrease the amount of support given as students become more independent at each stage of learning (Harland, 2003). This ensures that students are able to achieve their full potential at each stage whilst becoming more confident and being able to take greater responsibility for their learning through the progressive withdrawal of scaffolds (Harland, 2003). Students construct knowledge actively and engage in a process of meaning making through connection with prior knowledge and the real world (Phillips, 2000; Von Glasersfeld, 1991). They do this as individual learners and through social interactions and negotiation with others (Savery & Duffy, 2001; Savin-Baden & Major, 2004). In the PBL environment, the design of the learning environment that stems from the constructivist perspectives is characterised by:

The Use of Authentic Goal-directed Activities. Vygotsky (1978) believed that the essential role of education is to facilitate construction of knowledge through experiential, contextual and social interaction in real-world environments. The learning environment should consist of authentic tasks, which serve as cognitive triggers to stimulate learners' learning. These authentic tasks allow knowledge application, access to more knowledgeable others and a social context in which learners collaborate on knowledge co-construction.

The Need for Collaborative Learning. Students learn through the opportunities given to interact with each other, through sharing and clarifying ideas, seeking assistance, negotiating problems and discussing solutions (Bada & Olusegun, 2015; Hmelo-Silver & Barrows, 2008; Visschers-Pleijers et al., 2006). As students co-construct knowledge to solve authentic problems, the interaction with more knowledgeable others will transfer them from the lower to the upper limits of their ZPD (Vygotsky, 1978).

The Need for Self-directed Learning. Students should formulate their own learning goals and be given the autonomy to acquire strategies and knowledge necessary in their learning process (Dolmans et al., 2015; Kaufman, 2003). In this way, learners become very clear of the aims of each learning activity due to personal involvement. Learning becomes meaningful, which is an important motivating factor. In a constructivist learning environment, students are given opportunities to connect new ideas with prior knowledge and enable learning through reflection (Pritchard & Woollard, 2010). Through self-reflection, students monitor their own learning and thinking and become more directed by their internal mental processes.

The Need for Scaffolds. For students to reach their ZPD, scaffolds are needed. Here, the teacher is the facilitator who scaffolds students' learning (Pritchard & Woollard, 2010). The teacher provides guidance including feedback to engage students in their learning. In addition, knowledge representational tools can also be used to facilitate

the learning process. Hung and Nichani (2002) stated that such knowledge representational tools can include visualisation and simulation functions, concept mapping, information gathering templates, forms of self-evaluation and Web-based discussion platforms.

PBL and Technology

Technology is changing the way we live and learn. With the abundance of information and the ease with which to access and retrieve them from the Internet, the primary role of the teacher as the authority in specific fields of knowledge has been eroded. The acquisition and dissemination of knowledge is no longer of primary importance. In the twenty-first century classroom, it is the justification, application and synthesis of knowledge that are important. With the advancement of technology, especially with Web 2.0 tools, there is a great potential for using technology to support teaching and learning. For instance, technology can be harnessed in PBL to (i) provide access to multiple knowledge bases, (ii) provide electronic space for learners' self-directed and collaborative learning, (iii) provide a platform for reflection and documentation of learning, (iv) enhance authenticity of problem scenarios by the use of video technology and (v) provide question prompts, templates and mindtools to scaffold learners' learning at every stage of PBL.

PBL and Motivation

Motivation is an important construct as it is a major predictor of academic performance and well-being (Ryan & Deci, 2000; Wilson & Corpus, 2005). In an active and dynamic PBL environment, students are intrinsically motivated as they are challenged and are given autonomy to direct their own learning (Bayard, 1994; Sungur & Tekkaya, 2006). This is evident in a PBL environment whereby students formulate their own learning objectives and are self-directed in their acquisition of knowledge to solve the problem scenario presented. Students are also more motivated to learn when they believe they can control the outcome of their learning which is clearly evident in PBL where the problem scenario provides the proximal and tangible goal of applying their knowledge to solve a real, concrete problem (Bandura, 1997).

A review of the existing research indicates that PBL seems to have positive effects on learners' motivation. Prior research indicated an increase in learners' motivation after their PBL experience (Demirel et al., 2010; Downing et al., 2011; Ghufron & Ermawati, 2018; Hwang et al., 2006; Martin et al., 2008). LaForce et al. (2017) found that students who rated PBL more favourably had significantly higher intrinsic motivation and ability beliefs in science. In addition, Dolmans et al. (2015) suggested the possible relationship between PBL and intrinsic motivation whereby intrinsic motivation mediates the effects of PBL on deep learning. Pintrich (2002) suggested

that learners' intrinsic motivation to learn can change based on the learning context. It is thus of interest in this research to examine the effects of PBL (tPBL and ePBL) on preservice teachers' motivational orientations.

The Present Study

This research was positioned within the initial teacher preparation programme at the National Institute of Education (NIE), Singapore. In this research, the PBL component was designed to last seven weeks out of the thirteen weeks of the Educational Psychology course. Preservice teachers went through the PBL cycle (for both tPBL and ePBL). The stages of PBL are *Meeting the Problem*, *Problem Analysis and Learning Issues*, *Discovery and Reporting*, *Problem Solution*, and *Overview, Integration and Evaluation*. There were structured weekly sessions of two hours each for the first three stages of the PBL cycle to facilitate group discussions and tutor facilitation. During the first session of PBL, preservice teachers were given an overview of PBL, its philosophy, objectives and evaluation process. The preservice teachers were then divided into groups of three to five and were presented with the problem scenario and the PBL portfolio. The PBL portfolio (in the form of PowerPoint slides) comprised a set of question prompts for each stage of the PBL cycle to initiate and sustain preservice teachers' inquiry process. After the first three sessions of PBL, the preservice teachers had the autonomy to decide on the number of face-to-face meetings needed to complete the group project. The role of the tutor was to clarify expectations of the group project, scaffold their learning process and to facilitate group processes when necessary to maintain the group's focus. The last two tutorial sessions lasted two hours each and were dedicated to the presentations of the various PBL groups, followed by their reflections of the PBL learning process.

In the ePBL model, the essential stages and characteristics of the PBL cycle were similar to those of the tPBL model. However, in lieu of the PowerPoint slides that contained questions for each stage of the PBL process, an e-learning platform was used to provide the scaffolding. In this study, PBworks was selected as the e-learning platform. Thus, in the ePBL model, the portfolio rode on PBworks, a Web-based cognitive system which integrates learning objects, e-tools and e-platforms to promote online collaborations between team members. With the introduction of a Web-based scaffold system, the traditional PBL was enhanced in the following ways:

Embedded learning objects allowed preservice teachers' access to essential information about the group project such as the overview of PBL, course and project information. Navigation support videos and a list of frequently asked questions (FAQs) provided preservice teachers with the technical help needed to navigate the PBworks platform.

Use of video technology for the problem scenarios in ePBL provided a richer perceptual experience for preservice teachers.

Use of E-question prompts at every stage of the PBL cycle sequentially structured and facilitated preservice teachers' problem-solving process in PBL.

Use of E-tools and E-templates such as mind maps and KND charts provide the anchor for online collaboration and are useful physical representations that would guide preservice teachers' discussion and development of shared perspectives, artefacts and solutions (Jonassen, 1997).

E-platforms such as asynchronous discussion threads and synchronous online collaborations bring forth meaningful negotiation between peers and active seeking of opinions from the tutors at any place and time.

Research Questions

This study examines the effects of PBL (tPBL and ePBL) on preservice teachers' motivational orientations. Specifically the research questions are:

1. Are there any significant differences in preservice teachers' motivational orientations over two time points (Pre-PBL, Post-PBL)?
2. Are there any significant differences in preservice teachers' motivational orientations in tPBL and ePBL learning environments?
3. Are there any significant interaction effects of time (Pre-PBL and Post-PBL) and learning environment (tPBL and ePBL) on preservice teachers' motivational orientation?

Research Method

Research Sample

Informed consent was sought as participants signed a consent form before participating in the study. Participants were told that participation in the survey was voluntary and that they were free to withdraw at any time. When completing the questionnaire, participants were informed that there were no right or wrong answers. They were assured of the confidentiality of their responses. The first sample comprised 1041 preservice teachers doing a core Educational Psychology course with the tPBL approach. The second sample comprised of 1029 preservice teachers doing the same core Educational Psychology course with the ePBL approach.

Measures

The measures used for this study were taken from the Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich et al. (1993). The MSLQ is a self-report questionnaire designed to assess learners' learning strategies and motivational orientations. The motivation section contains 26 items and assesses five major motivational dimensions, including learners' *intrinsic goal orientation*, *control of learning beliefs*, *task value*, *self-efficacy for learning* and *extrinsic goal orientation.* Intrinsic goal orientation refers to the learners' motivation and engagement in a task due to their curiosity, a goal to master the task, and the inherent challenge of the task. An example of the item is "I prefer course material that really challenges me so that I can learn new things". Control of learning beliefs refers to learners' belief that positive outcomes are the result of their efforts. An example of the item is "If I try hard enough, then I will understand the course material". Task value is learners' perception that the task they engage in is interesting, important, and useful. An example of the item is "I think the course material in this class is useful for me to learn". Self-efficacy for learning is defined as learners' confidence in their ability to accomplish a task. An example of the item is "I am confident I can learn the basic concepts taught in this course" and Extrinsic goal orientation is learners' motivation and engagement in a task because of rewards, good grades, and positive social evaluation. An example of the item is "If I can, I want to get better grades in this class than most of the other students". Preservice teachers rated each item on a 5-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree).

Data Analyses

A 2 × 2 repeated-measures analysis of variance (ANOVA) was conducted in this study to examine potential differences in motivational orientations among preservice teachers in the tPBL and ePBL environments before and after their PBL experience. That is, the MSLQ (motivational orientations) was administered to preservice teachers in tPBL and ePBL environments at two points in time during the Educational Psychology course, in Week 5 (pre-PBL) and Week 12 (post-PBL), with an interval of seven weeks. The descriptive statistics, distributional properties and internal consistency of the subscales at pre-tPBL and post-tPBL as well as pre-ePBL and post-ePBL experience are reported in Tables 8.1 and 8.2, respectively. In addition, the means and standard deviations of preservice teachers' motivational orientations across two periods (Pre-PBL, Post-PBL) and environment (tPBL, ePBL) are reflected in Table 8.3.

Table 8.1 Descriptive statistics and Cronbach's alphas for subscales of pre-tPBL and post-tPBL motivational orientations

	Mean (*M*)	Standard deviation (SD)	Skewness	Kurtosis	Cronbach's α
Pre-tPBL motivation orientations (5 subscales)					
Intrinsic goal orientation	3.66	0.60	−0.14	−0.05	0.66
Control of learning beliefs	3.65	0.58	−0.03	−0.09	0.68
Task value	3.89	0.60	−0.17	−0.18	0.87
Self-efficacy for learning	3.35	0.61	−0.08	−0.12	0.90
Extrinsic goal orientation	3.14	0.79	−0.20	−0.10	0.76
Post-tPBL motivation orientations (5 subscales)					
Intrinsic goal orientation	3.69	0.57	−0.21	−0.11	0.73
Control of learning beliefs	3.66	0.59	0.01	−0.20	0.73
Task value	3.86	0.60	−0.15	−0.25	0.89
Self-efficacy for learning	3.45	0.60	−0.03	−0.25	0.90
Extrinsic goal orientation	3.19	0.76	−0.07	−0.17	0.79

Results

Main Effects of Time (Pre-PBL, Post-PBL)

The results for the ANOVA test are shown in Table 8.4. There were significant main effects of time (pre-PBL, post-PBL) on control of learning beliefs, Wilks's $\Lambda = 0.988$, $F(1, 2068) = 24.98$, $p < 0.001$, $\eta^2 = 0.012$; task value, Wilks's $\Lambda = 0.953$, $F(1, 2068) = 103.07$, $p < 0.001$, $\eta^2 = 0.047$; self-efficacy for learning, Wilks's $\Lambda = 0.984$, $F(1, 2068) = 34.10$, $p < 0.001$, $\eta^2 = 0.016$; and extrinsic goal orientation, Wilks's $\Lambda = 0.997$, $F(1, 2068) = 7.00$, $p = 0.008$, $\eta^2 = 0.003$. The findings showed that preservice teachers' post-PBL self-efficacy for learning and post-PBL extrinsic goal orientation were significantly higher than their pre-PBL self-efficacy for learning and pre-PBL extrinsic goal orientation, respectively. In contrast, their post-PBL control of learning beliefs and post-PBL task value were significantly lower than their pre-PBL control of learning beliefs and post-PBL task value, respectively (see Table 8.3). These results demonstrate that even though there was an increase in preservice teachers' confidence in their ability to do well for the course, there was also a decrease

Table 8.2 Descriptive statistics and Cronbach's alphas for subscales of pre-ePBL and post-ePBL motivational orientations

	Mean (*M*)	Standard deviation (SD)	Skewness	Kurtosis	Cronbach's α
Pre-ePBL motivation orientations (5 subscales)					
Intrinsic goal orientation	3.53	0.61	−0.04	−0.01	0.61
Control of learning beliefs	3.74	0.60	−0.08	−0.21	0.65
Task value	3.92	0.61	−0.22	−0.15	0.87
Self-efficacy for learning	3.37	0.65	−0.02	−0.16	0.90
Extrinsic goal orientation	3.12	0.85	−0.01	−0.26	0.77
Post-ePBL motivation orientations (5 subscales)					
Intrinsic goal orientation	3.53	0.59	0.01	0.22	0.74
Control of learning beliefs	3.61	0.55	0.08	0.01	0.70
Task value	3.71	0.60	−0.05	0.03	0.89
Self-efficacy for learning	3.42	0.66	0.01	−0.03	0.92
Extrinsic goal orientation	3.14	0.81	−0.21	−0.06	0.80

Table 8.3 Means and standard deviations motivational orientations across two periods (pre-PBL, post-PBL) and environment (tPBL, ePBL)

	Time				
	Environment	Pre-PBL		Post-PBL	
		M	SD	*M*	SD
Motivational orientations (5 subscales)					
Intrinsic goal orientations	tPBL	3.66	0.60	3.69	0.57
	ePBL	3.53	0.61	3.53	0.59
Control of learning beliefs	tPBL	3.65	0.58	3.66	0.59
	ePBL	3.74	0.60	3.61	0.55
Task value	tPBL	3.89	0.60	3.86	0.60
	ePBL	3.92	0.61	3.71	0.60
Self-efficacy for learning	tPBL	3.35	0.61	3.45	0.60
	ePBL	3.37	0.65	3.42	0.66
Extrinsic goal orientation	tPBL	3.14	0.79	3.19	0.76
	ePBL	3.12	0.85	3.14	0.81

in their valuing of the course and their beliefs that they were able to control their learning outcomes after going through PBL.

Main Effects of Environment (tPBL, ePBL)

There was a significant main effect of PBL environment on intrinsic goal orientation, $F(1, 2068) = 41.24$, $p < 0.001$, $\eta^2 = 0.020$. Preservice teachers going through the tPBL approach were more intrinsically motivated than preservice teachers who went through the ePBL approach (Table 8.3).

Interaction Effects of Time and Environment on Motivational Orientations

The 2 × 2 repeated measure ANOVA revealed that there were significant interaction effects between time (pre-PBL, post-PBL) and types of environment (tPBL, ePBL) on preservice teachers' control of learning beliefs, task value (see Table 8.4). Follow-up tests to assess simple effects were conducted when the interaction between time and environment was significant. Simple *t*-tests were used for interaction comparisons. Specifically, the following sets of comparisons were carried for each set of subscales

(1) Compare between ePBL and tPBL at pre-PBL and post-PBL
(2) Compare between pre-PBL and post-PBL for ePBL and tPBL

In terms of preservice teachers' motivational orientations, at pre-PBL, their control of learning beliefs in the ePBL environment was significantly higher than their control of learning beliefs in the tPBL environment, $t(2068) = 3.65$, $p < 0.001$, $d = 0.16$. However, there was no significant difference in preservice teachers' control of learning beliefs in the ePBL and tPBL environment at post-PBL, $t(2068) = 2.14$, $p = 0.033$. There was no significant difference in preservice teachers' control of learning beliefs over time in the tPBL environment, $t(1040) = 0.58$, $p = 0.562$. In the ePBL environment, their control of learning beliefs was significantly lower at post-ePBL than pre-ePBL, $t(1028) = -7.53$, $p < 0.001$, $d = 0.24$. The interaction graph (Fig. 8.1) shows that, whilst control of learning beliefs of preservice teachers in the tPBL group were relatively stable before and after their tPBL experience, control of learning beliefs of preservice teachers in the ePBL group significantly decreased after their ePBL experience.

For task value, there was no significant difference for preservice teachers in the ePBL and tPBL environment at pre-PBL, $t(2068) = -0.10$, $p = 0.32$. At post-PBL, however, task value of preservice teachers in the tPBL environment was significantly higher than those in the ePBL environment, $t(2068) = 5.57$, $p < 0.001$, $d = 0.24$. In the tPBL environment, there was no significant difference between preservice teachers' task value at pre-tPBL and post-tPBL, $t(1040) = -1.94$, $p = 0.053$. However, in

Table 8.4 Results of 2 × 2 ANOVA for motivational orientations on time (pre-PBL, post-PBL) and on environment (tPBL, ePBL)

	Time			Environment			Interaction		
	Λ	P	η^2	$F(1, 2068)$	p	η^2	Λ	p	η^2
Motivational orientations (5 subscales)									
Intrinsic goal orientation	0.999	0.129	0.001	41.24***	< 0.001	0.020	0.999	0.158	0.001
Control of learning beliefs	0.988***	< 0.001	0.012	0.86	0.355	< 0.001	0.984***	< 0.001	0.016
Task value	0.953***	< 0.001	0.047	6.42	0.011	0.003	0.974***	< 0.001	0.026
Self-efficacy for learning	0.984***	< 0.001	0.016	0.02	0.884	< 0.001	0.998	0.024	0.002
Extrinsic goal orientation	0.997**	0.008	0.003	1.46	0.227	0.001	1.000	0.407	< 0.001

*** $p < 0.001$, ** $p < 0.01$

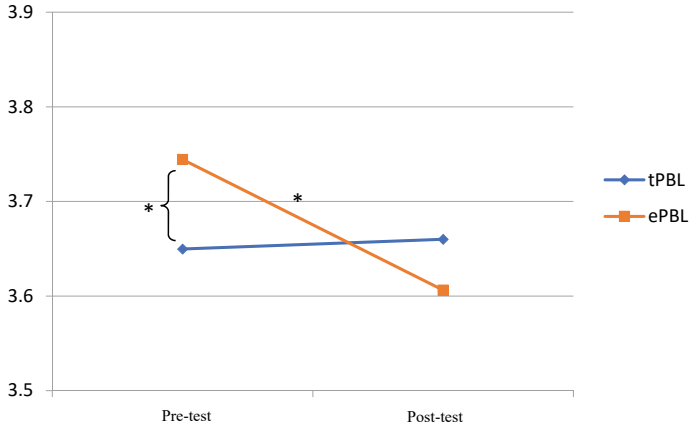

Fig. 8.1 The interaction effect of time × environment on preservice teachers' control of learning beliefs

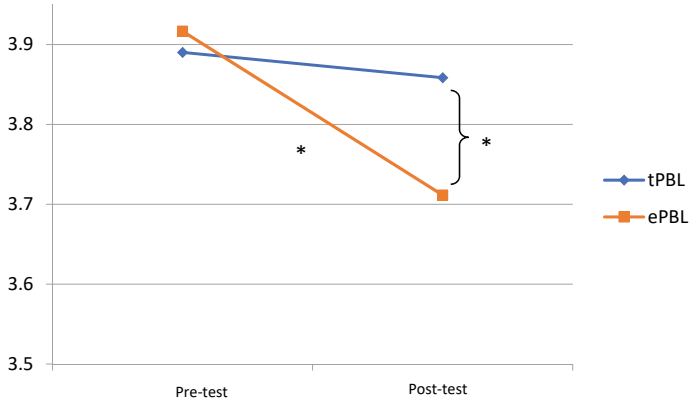

Fig. 8.2 The interaction effect of time × environment on preservice teachers' task value

the ePBL environment, their task value was significantly lower at post-ePBL than pre-ePBL, $t(1028) = -12.33$, $p < 0.001$, $d = 0.34$. Thus, the graphical representation of this interaction effect (see Fig. 8.2) shows that, whilst task value of preservice teachers in both the tPBL and ePBL environments were relatively lower after their PBL experience, this decrease was more substantial for the preservice teachers in the ePBL environment than that for preservice teachers in the tPBL environment.

Discussion

This study looks at the changes in preservice teachers' intrinsic goal orientation, control of learning beliefs, task value, self-efficacy for learning and extrinsic goal orientation. Results from this study indicated no significant increase in intrinsic goal orientation. However, there were significant increases in preservice teachers' self-efficacy for learning and extrinsic goal orientation. In addition, the changes in preservice teachers' control of learning beliefs and task value were dependent on the type of PBL environment (tPBL, ePBL). The current findings are different from those documented by Sungur and Tekkaya (2006). They found that among all the motivational orientations, there were only significant increases in intrinsic goal orientation and task value after PBL.

The PBL project that the preservice teachers have to submit at the end of the course constitutes forty per cent of the course assessment. It is plausible that by virtue of the course expectations, the motivation and engagement in PBL tasks due to grades and positive social affirmation is higher at the end of the course. The results suggest that extrinsic goal orientation may be more easily influenced by the learning environment such as assessment requirements and social affirmation as compared to intrinsic goal orientation which reflects individual differences in learning dispositions. It is also noted that there is an increase in preservice teachers' self-efficacy for learning after their PBL experience. This seems logical as after embarking on a collaborative knowledge building process in the earlier PBL stages, the preservice teachers will bring closure to their PBL journey with the presentation of their proposed solutions, followed by an internalisation of their own learning. Thus, it is not surprising that with the successful completion and presentation of their PBL project, there is an increase in preservice teachers' perceived confidence in their ability to learn and perform well for the course.

With regard to control of learning beliefs and task value, findings from this study established that the changes were dependent on the type of learning environments (tPBL versus ePBL). Preservice teachers' control of learning beliefs in the tPBL environment remained relatively unchanged before and after their tPBL experience whereas the control of learning beliefs for preservice teachers in the ePBL environment significantly decreased after their ePBL experience. Control of learning beliefs measures the degree to which preservice teachers perceive that positive learning outcomes are the results of their efforts. There are two plausible explanations for the decrease in preservice teachers' perceived control of learning beliefs in the ePBL environment. Firstly, several preservice teachers might lack the cognitive and metacognitive readiness to organise and document their thought processes and fully utilise the ePBL platform to enhance their learning. Secondly, there is a perceived lack of ease in using the ePBL Web 2.0 platform (PBworks), and time was needed to acquire the technical knowledge to navigate the platform.

Indeed, preservice teachers may find this initial transition to the ePBL environment difficult. Studies have found that transitioning from classroom based approach to online learning may impact students' concentration and engagement with the content

presented (Coman et al., 2020; Friedman, 2020; Walters et al., 2021). Furthermore, learners need cognitive and metacognitive strategies to manage their own learning by utilising online resources effectively (Allan, 2004; Sweeney et al., 2004) in the dynamic Web-based learning environment (Kuiper et al., 2009). Preservice teachers' confusion with the extensive amount of resources available on the ePBL platform might also be due to the fact that they are not confident that their selection of information and choice of templates will help in their problem solving process. With the extensive source of information and social collaboration opportunities on the World Wide Web, technology opens up possibilities but at the same time increases the ambiguity of the ePBL environment. These preservice teachers might experience discomfort as they were not sure whether they were on the right track. In addition, it is possible that preservice teachers need greater self-regulatory abilities and metacognitive readiness to organise their arguments, document their thought processes and present their findings in the dynamic ePBL environment.

Moreover, in a collaborative ePBL environment, learners may have difficulty explaining difficult concepts online to their group members, and this reduced the possibility of receiving immediate feedback as compared to learning in a face-to-face PBL environment. It is also possible that these preservice teachers may have difficulty adjusting to such a learning environment because educational technology was at a very different stage of development at the time when they were students. All these factors could have added to their uncertainty that their efforts will bring forth positive outcomes.

Task value measures the degree to which the preservice teachers perceive that the tasks they engage in are interesting, important and useful (Pintrich et al., 1993). The interaction effect shows that whilst task value for both tPBL and ePBL groups are relatively lower after their tPBL and ePBL experience, respectively, the decrease is more substantial for preservice teachers in the ePBL group as compared to the tPBL group. The task value subscale as used in this study attempts to measure three components, namely, the importance value, utility value and interest value. In this study, interest refers to preservice teachers' perceived intrinsic interest in the subject matter; importance value is concerned with the importance of course content, whereas utility value is related to preservice teachers' perception that mastery of the subject matter is beneficial to them as teachers in future.

Before attempting to suggest plausible reasons for the findings, it is pertinent to understand the prior learning experiences of our preservice teachers. For the majority of the preservice teachers, their learning experiences may be mainly didactic and teacher-centred during their school days. Learners with such experience generally place great emphasis on the immediate acquisition and application of content knowledge. In a PBL environment, learning goes beyond the gaining of content knowledge. Traditional didactic methods deliver content knowledge directly to the learner, whilst PBL places the responsibility of content learning on the learner. Learners habituated to traditional instructional methods may perceive learning outcomes strictly in terms of content knowledge. Thus, these preservice teachers may have been preoccupied with satisfying their immediate learning needs of content knowledge (Williams &

Williams, 1997) and failed to appreciate the importance of the development of cognitive, problem-solving and metacognitive skills. As a result, preservice teachers' perception of the task value of tPBL/ePBL may have been adversely affected because content knowledge was not directly delivered to them, according to their expectations. The preservice teachers also had to undergo an active and tedious problem solving process in order to attain the relevant content knowledge and skills. This may once again negatively influence their perceptions of the task value for the subject matter. Moreover, with the focus on acquiring content knowledge, they might not recognise the importance of developing cognitive and problem solving skills, and hence fail to perceive them as desirable learning outcomes.

According to Azer (2001), learning collaboratively in groups in PBL may be stressful to the learners as the learning objectives are learner-initiated, and there is ambiguity and a lack of specificity in terms of the depth and breadth of their learning needs. Learners prefer structured tasks and assignments which are clear and quick to complete (Edens, 2000). As PBL is a continuous iterative learning process, this uncertainty and lack of clarity may result in continual pressure faced by the preservice teachers, which could be tiring. This feeling of fatigue coupled with frustration may in turn diminish these preservice teachers' intrinsic interest to learn the subject matter.

With regard to the greater decrease in task value for the ePBL group, one possible explanation is that in the ePBL environment, some preservice teachers might feel that there was a lack of autonomy given because the e-platform that was built on PBworks to scaffold their PBL at every stage was too structured for them. They might have preferred to have the freedom and choice to create their own folders to organise and document their learning at each PBL stage. This imposing of goals, directives and deadlines might deter rather than enhance communication and collaborative effort between group members. The findings are not surprising from the self-determination theory's perspective (Deci & Ryan, 1985, 1991). According to Deci and Ryan, human beings have three innate psychological needs for autonomy (choice), competence and relatedness, and the fulfilment of these needs is crucial for the development of the self in terms of growth and personal well-being. Indeed, research has established that the lack of autonomy, created by lack of choice, imposed goals, directives and deadlines, diminishes students' intrinsic motivation and interest to learn (Grolnick & Ryan, 1987; Ryan & Deci, 2000).

According to some preservice teachers in the study, PBworks was not user-friendly and a considerable amount of time was needed to attain the technical knowledge needed to navigate and use the platform. Learners do need adequate technical competencies to manage their learning in online collaborative settings. Hsu (2016) who found that teachers who had constructivist pedagogical beliefs about technology use were more likely to have higher self-efficacy beliefs in using technology and will use technology in their classrooms. In contrast, findings from reviewed studies suggest that the technical difficulties encountered by the preservice teachers may affect their perception on the perceived usefulness of PBworks and their use of technology (Dinc, 2019; Petko, 2012; Venkatesh & Davis, 2000; Yi & Hwang, 2003). The lack of perceived usefulness of the technological platform coupled by the

open-endedness and lack of specificity of learning in PBL may have all affected the preservice teachers' perceived utility value of the subject matter.

Conclusion

In summary, the findings appear to support the fact that PBL has a positive effect on preservice teachers' self-efficacy for learning and extrinsic goal orientation. For preservice teachers' control of learning beliefs, results indicate that in the tPBL environment, it remains relatively unchanged before and after their tPBL experience, whereas the control of learning beliefs for preservice teachers in the ePBL environment significantly decreases after their ePBL experience. Likewise, whilst task value for both tPBL and ePBL groups is relatively lower after their tPBL and ePBL experience, the decrease is more substantial for preservice teachers in the ePBL group as compared to the tPBL group. Taken together, to the implications are: (i) facilitate preservice teachers' transition to tPBL/ePBL environment as their prior didactic experience may result in a lack of cognitive and metacognitive readiness for tPBL/ePBL, (ii) clearly communicate that learning in the twenty-first century goes beyond content knowledge acquisition, that it is about developing the cognitive, metacognitive and motivational dimensions that are essential for self-directed learning and effective problem solving, and (iii) continuously immerse preservice teachers in PBL environments across the curriculum so that with more experience in open-ended, learner-centred constructivist environments (to "replace" their prior didactic teacher-centred learning experience), they will understand and cultivate the habits of mind required to benefit from their PBL learning. In addition, there appears to be the presence of a steep learning curve in a technology-enhanced PBL environment. Thus, considerations need to be taken with regard to (i) the ease of use of the technological tool and (ii) the need for the preservice teachers to learn how to use the technological tools so as to better prepare them for learning in the dynamic e-platform.

Given the impactful role of technology in today's education context, it is important to not simply discard away ePBL. In today's society, teachers' abilities to use technology in teaching and learning would benefit not only themselves but their students as well. From the results of this study, plausible refinements made to enhance preservice teachers' intrinsic goal orientation, control of learning beliefs and task value could maximise the potential and viability of ePBL. With student-centred, inquiry-based learning such as PBL being an important pedagogical approach to engage our students in today's classroom, teachers who are equipped with skills gained from PBL would be able to navigate the twenty-first century education landscape more effectively.

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Chapter 9
Moving Towards a More Inclusive Collaboration Culture that Promotes Lifelong Learning to Build a Resilient Workforce

Ching Leen Chiam

Abstract The global crisis of the coronavirus disease (COVID-19) pandemic has disrupted the job landscape and triggered unprecedented uncertainty. This chapter provides a review of the fundamental changes to how we live and work due to COVID-19. It highlights the shifts in employers' and employees' priorities, acceleration of digital skills and virtual tools for working and learning remotely, the increase of mental-social-emotional stress, and the widening of the digital divide that depress employment prospects of those most vulnerable, such as low-skilled workers, those with low educational attainment and in sectors that face limited access to social protection and high risk of displacement—putting a spotlight on issues of well-being and inequalities. A review of the consequences forms a major part of this book chapter. While acknowledging that governments have acted fast to provide stimulus to help the workforce, the impact of COVID-19 on the workforce cannot be denied. Founded on such an argument, the closing sections of the chapter propose ways of moving towards a more inclusive collaboration culture to build a resilient workforce.

Introduction

The sudden emergence of coronavirus disease (COVID-19) has created a global crisis that disrupted the job landscape and triggered unprecedented uncertainty. From endemic, it became epidemic and from epidemic it became pandemic within a matter of fewer than three months, crippling the political, social, cultural, and economic life of billions of people throughout the globe (Financial Times, 2020). The economic and social losses incurred globally are much more extensive than those of the 2008 global financial crisis (Maiti and Locke, 2021). Individuals, businesses, and governments alike are dealing with the changes arising from it. Employers and workers were displaced, and many plans were derailed, mankind faces more financial stress, emotional stress, mental health, and burnout. Through public finance and

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national budgets, governments have provided an unprecedented fiscal response to relief and support businesses and households during the lockdowns enacted to slow down the spread of the virus, staving off the economic scarring that could arise if mass bankruptcies and unemployment were to occur (Wu, 2021). New variants of the COVID-19 such as the Omicron continue to be discovered posing a threat globally. Humanity faces a long struggle, and it raises questions about the speed and strength of an economic recovery over the near term.

In the below section, the fundamental changing contexts, as well as insights into employability in general and skills within a broader historical context of evolving sense of social conformity are discussed and suggestion is made of the important implications for the more intentional role of employers in seeking ways of moving towards more inclusive collaboration culture to build a resilient workforce. In this, we ask what is resilience? Why is resilience even more important now to ensure long-term sustainability? Why is inclusive collaboration culture ever more important to champion a resilient workforce for sustainable development? This chapter aims to provide insights into how a more inclusive collaboration culture that promotes lifelong learning can make the most of the culture and context that helps build a resilient workforce.

Fundamental Changes to How We Live and Work

The COVID-19 pandemic has caused stark changes to how we live and work. We are still reeling from its effects. The purposeful need for social distancing to avoid the spread of the COVID-19 virus has opened a range of possibilities such as the change of work practices to work from home, accelerated digital transformation and e-commerce, and the surge in virtual teamwork as well as a multitude of new challenges. There is greater adoption of automation, the shift of work from a brick-and-mortar model to a platform model. There has been the growth of digital transformations, with digital certifications, the blooming of hybrid work models, virtual teams, and virtual tools for working and learning remotely. Workers need to be able to get work done while operating at a distance from co-workers. Managers and team leaders need the skills required to motivate and manage distributed teams (Sheppard, 2020). Job seekers and employees alike have been driven to increase their digital skills to enable them to communicate online.

It also drew greater attention to social and economic disparity, exclusion, and marginalisation faced by lower-income and lower-skilled employees (Chok, 2021). Lower-income and lower-skilled employees were hit much harder as they were at higher risk of displacement and had limited access to social protection. Migrant workers who are separated from their families due to the cross-border restrictions are more worried about their safety and their family's safety back home. Those who live alone, and the elders are now more isolated and face issues of loneliness. Working parents are now suddenly scrambling for more space and trying to adapt to each family member's preference and way of thinking. They must balance work and

home life as they adapt to working from home while their kids undergo home-based learning.

Due to social restrictions, there is a shift towards fewer face-to-face interactions, and the well-being of employees is affected, with exacerbation of mental and socio-emotional stress. Findings from the 2019 Cigna 360 Well Being Survey Report conducted by Cigna (2019), a global healthcare company—that has been closely tracking perceptions of the well-being of 20,000 people across China, Hong Kong, Korea, New Zealand, Singapore, Sain, Taiwan, Thailand, United Arab Emirates, the United Kingdom (UK), and the United States (US) on five topics that influence being: physical, family, social, financial, and work—has highlighted that before COVID-19 pandemic, 92% of employed respondents in Singapore are stressed, much higher than the global average of 84%.

Of the respondents, the *sandwich generation*, defined as those between the ages of 35 and 49 years old who make up the core generation group of workplaces who often bear the brunt of caring for their ageing parents as well as their own families, scored the lowest in most dimensions, underlining the fact that the worries of this group are on the rise while the response to their needs has been slow (Cigna, 2019). The same report established that 87% of sandwich generation workers experienced work-related stress, with 12% feeling that their stress is unmanageable and 64% claiming to be in an 'always on' environment where they feel the need to constantly access work emails, attend work calls or check mobile phones for work purposes. Working women reported more stress compared to working men, with 88% of working women reporting stress compared to 85% of working men. Gender gaps in leadership roles, pay disparities, and the glass ceiling have been reported as factors that play a part in placing unmanageable stress on women in the workplace.

In the second edition of the Cigna COVID-19 Global Impact Study: New Direction report (, July), 18% of people surveyed responded that they believed their life will never be the same again, up 13% compared to the COVID-19 Global Impact Study in April 2020 (Cigna, 2020a, 2020b, 2020c, 2020d, April). In the third edition of the COVID-19 Global Impact Study: Resilience and Well-being through the Pandemic report (Cigna, 2020a, 2020b, 2020c, 2020d, September), in terms of what will change due to the COVID-19, 40% reported their financial status or how they manage their finances while 37% reported they are worried about future pandemics emerging. Physical health and well-being are also a concern, with 36% alluding to how their lives will change in the future (Cigna, 2020a, 2020b, 2020c, 2020d, September). The report noted how Hong Kong, Singapore, the UK, and the US experienced a weak bounce back, indicating a more negative outlook from people in those markets compared to China, Spain, Thailand and the UAE (Cigna, 2020a, 2020b, 2020c, 2020d, September). In Singapore, for instance, only the family index was relatively stronger while the physical index, social index, financial index, and workplace index were painted with indices falling to recover. Family index refers to a family's well-being (i.e., less worried about families' well-being helped by the fact that people were able to be at home and able to observe their loved ones more closely) and physical index refers to being physically active (i.e., lockdown caused them to have less chance of being physically active). However, in the subsequent fourth edition

of the Cigna COVID-19 Global Impact Study: Future Uncertainty Hangs Heavy (Cigna, 2020a, 2020b, 2020c, 2020d, December), the UK, Singapore, Taiwan, and New Zealand record lows for well-being.

Research findings on the impact of COVID-19 on the workplace, from the latest AI@Work Study, have surprisingly found that many people viewed 2021 as even worse than 2020 when businesses had to be shut down, with 2021 characterised as their most stressful year ever at work and 52% reported struggling more with mental health issues this year than last (Oracle & Workplace Intelligence, 2021). That study included 14,639 C-suite executives, HR leaders, managers and full-time employees between the age of 22–74 years old from across 13 countries, including the US, the UK, the UAE, France, the Netherlands, Germany, Brazil, India, Japan, South Korea, Singapore, and Australia and was conducted between July 27 and August 17, 2021.

Inclusive Collaboration Culture for Promoting Lifelong Learning

It is without a doubt that the COVID-19 has exposed the frailties of our society. The uncertainties surrounding the COVID-19 have caused increased anxiety about the unknowns and potential longer-term implications (Cigna, 2020a, 2020b, 2020c, 2020d, December). The prolonged national lockdowns and social separation measures to reduce the risk of viral transmission have also led to increased anxiety, depression, and stress (Brooks et al., 2020). The culmination of all these suggests that the road ahead for the workforce is fraught with problems and its ultimate destination is uncertain. From the present vantage point, although the workforce may appear unremittingly gloomy, there are few reasons to believe that it cannot be made substantially brighter in the years ahead. It is believed that resilience can ameliorate, or protect the workforce from the full effects of the risk or adversity, to positively adapt in a way that promotes growth and well-being (Windle, 2010).

Resilience is defined as the process of effectively negotiating, adapting to, or managing significant resources of stress or trauma (Windle, 2010). It is widely accepted that resilience is associated with individual capacities, relationships, and the availability of community resources and opportunities within the individual, their life, and environment that facilitates the capacity for adaption or bouncing back in the face of adversity. It is widely accepted that social inclusion (i.e., the process to improve participation, equal opportunity and empowerment) promotes a better social safety net that can be a powerful instrument to promote resilience to crises (Silva et al., 2013).

It is reasonable to expect that a more inclusive collaboration culture would promote a lifelong learning society capable of building a resilient workforce that can resolve or at least ameliorate the most serious consequences of the unprecedented challenges emerging in our workforce as one can reach out to others for support, who may, in

turn, provide access to material and emotional support. Following scholars of inclusion such as Ferdman and Deane (2014), this paper defines inclusive collaboration culture as involving creating, fostering, and sustaining practices and conditions that encourage and allow each worker to be fully themselves—with the differences from and similarities to those around them—as they work together. To be an inclusive work setting, the practices and conditions should also permit and elicit everyone's full contributions to the collective in a virtuous cycle that is beneficial both for individuals and the larger groups and/or organisations to which they belong (as well for their various social identity groups). In this, the literature has suggested that interactions in inclusive collaboration culture enable 'people to build trust, confidence, and cooperation, to commit themselves to each other (i.e., reciprocity), and thereby to knit the social fabric' (Dinda, 2014, p. 878). In the inclusive collaboration culture, a sense of belonging and the concrete experience in the social network arise that creates the base for social capital formation. Herein, social capital refers to relations of interdependence between individuals or the features of social connections among individuals, such as networks, norms of reciprocity and trust that arise from them, that facilitate coordination and cooperation for mutual benefit (Putnam, 1994). However, diversity and inclusion scholars have noted that building inclusive collaboration often remains an elusive goal. People have a homophily tendency or a tendency to seek out or be attracted to those who are similar to themselves (Stewart & Valian, 2018).

In a study released by Enterprise decision platform Cloverpop in 2017, they found that while inclusive decision-making increased friction by 15%, it led to better business decisions 87% of the time, reaching those decisions twice as fast in half of the meeting times (Larson, 2019). In practice, while there is a shift in attention and intention to fostering more diverse, equitable, and inclusive workplaces, in reality the representations of women and minority demographics in boardrooms are still abysmal (Deloitte, 2019, Jan 16). In keeping to close the gap in disjunctures that do not meet the inclusive mantra, a meaningful shift of mindset and authentic commitment towards inclusive collaboration is required.

Researchers have made further distinctions about the quality and kinds of social capital that exists in three groups: bonding, bridging, and linking social capital (Claridge, 2018; Szreter & Woolcock, 2004). Bonding social capital refers to aspects of a 'horizontal bond of connectedness' with 'inward looking', 'thick trust' social networks that reinforce exclusive identities and homogeneous groups of people with a similar background (Szreter & Woolcock, 2004). Bridging social capital refers to 'horizontal bonds of connectedness across diverse horizontal groups', with 'outward looking' social networks across different social and ethnic groups that do not necessarily share similar identities (Szreter & Woolcock, 2004). Linking social capital refers to relations between individuals and groups in different social strata in a hierarchy.

Bonding social capital provides material and emotional support because they know each other and interact frequently with each other hence being more protective (Claridge, 2018). In bridging social capital, relationships tend to be weaker or also known as 'weak ties' and 'thin trust' owing to the realities of space–time locality differences

and with someone likely to have a contrasting social identity, different skills, knowledge, information, and friends, who typically do not associate together information and other groups, or individuals not previously known to the other (Claridge, 2018; Szreter & Woolcock, 2004). The work by Granovetter (1973) has shown us that one gains most information from weak ties. Weak ties conversations are lighter and less demanding, providing stimulation but also in times of uncertainty, guidance on how to behave. For instance, by engaging in social conversation with weak ties, people can learn how to cope with the various difficulties of life under lockdown. Linking social capital can mobilise political resources and power and has been demonstrated to be central to well-being, especially in poor communities (Jordan, 2015). Linking social capital opens economic opportunities to those belonging to less powerful and excluded groups.

I want to suggest that a more inclusive collaboration culture between people of divergent expertise, cultural backgrounds, socioeconomic backgrounds, or ages promotes bridging and linking of social capital among members in the workplace to individuals or groups not previously known to the other that in turn provide access to information that helps with lifelong learning and resiliency of the workforce. It is nevertheless important to have an appropriate balance of bonding, bridging, and linking social capital, not just linking social capital with the absence of other social capital. Communities with higher levels of all forms of social capital are more able to mobilise in the face of adversity (Onyx et al., 2007).

Discussion on Consequence of Contextual Changes Brought by COVID-19

COVID-19 has led to a series of impacts and is likely to be with us for a while and its economic and social aftermath would perhaps be much longer. It has also pushed awareness of the disparities, inequalities of resources and power, increased hardship due to dire employment issues, and mental health issues into public consciousness (Humans Right Watch, 2021). It is not yet known how quickly we will recover from it, and it appears that such disruptions will become much more common as new COVID-19 variants come into existence and each would have a significant impact on our workforce. Hence, the importance to prepare our workforce for this cannot be overstated.

If surviving and thriving post-COVID 19 are our goals as a society, building a resilient workforce that promotes lifelong learning is pertinent. In doing so, apart from upskilling workers to drive the post-COVID 19 recoveries, a more inclusive collaboration culture is a critical part of the resilience game plan. Understanding in detail the drivers and shapers of inclusive collaboration culture at the multiple facets of the workforce is important. Essentially, the claim, as documented and supported throughout this book chapter, is that the practice of a more inclusive collaboration culture permits applying the collective wisdom regarding diversity—more than the

sum of what it is—and does so in a way that focuses on recognising and realising the positive contributions of diversity in the ecosystem. The book chapter hopes to open readers' sensitisation that an inclusive collaboration culture offers a rich resource to be tapped and enjoyed. As such, each member of the workforce should be empowered to share their thoughts, experience, and knowledge.

Concerning this, it is postulated that intentional efforts in creating ubiquitous collaboration network infrastructure are required for people to engage productively and form relationships with one another. The ubiquitous collaborative network infrastructure refers to boundary objects, tools, mechanisms, platforms, and resources to enable members to share their knowledge such as through availing professional development courses/workshops, resources for videoconferencing, study trips, learning journeys visits, and learning festivals. For instance, in an organisation, there can be the intentional formation of platforms such as special interest groups or learning networks that bring multi-disciplinary and multi-sectorial members from different departments, organisations and sectors to come together for productive sharing, discussions, make discoveries, and take actions that can ultimately be beneficial to members in finding approaches to persistent social, economic, and environmental challenges.

The power of such a platform resides in the connections and how connection and flow contribute to life, liveliness, and learning. Networks that acquire greater social qualifications profiles such as reliability will be more successful at acquiring additional connections (Ritter & Gemünden, 2003; Siemens, 2005). This is apt against the background of increasing stress of job insecurity and can help eradicate anxiety and problems of loneliness. Just as wider circles of networks would allow us a wider group of career opportunities and wider access to a support system.

As Chiam (2021) explicated on the power of learning networks, the diversity of the network's membership is a core consideration for the reasons for communication and that diversity has considerable potential to provide relational insights. She explicated that as humans have a herd mentality, it is easy for learners to gather with others who share their passion to learn, views, and interests, thus causing networks to have a 'birds of a feather' effect (Siemens & Weller, 2011). Iterations of interaction between a group of actors also lead to a convergence of norms, values, beliefs, and behaviours (Steward & Conway, 2000). This process of convergence or 'isomorphism' leads to the formation of densely connected groups of learners, terms 'cluster' or 'cliques'. Likewise, the 'homophily (the similarity of learners) and effective communication breed each other' (Rogers & Bhowmik, 1971) can also lead to the pooling of ignorance. Interactions that lead to innovation are often those that are between 'heterophilous' (dissimilar) learners that meet less frequently (Steward & Conway, 2000).

It has been argued that ideas and information that pass between 'heterophilous' (dissimilar) actors are more likely to be 'new' and 'fresh' (Rogers & Kincaid, 1981). This is supported by the work by Granovetter (1973) which has shown us that weak ties with heterophilous contacts provide an opportunity for the actors to increase the exchange of information among members of the network. This leads to a higher propensity of the dialogue that will lead to the identification of blind spots and

thereby hold the key to unlocking ideas for improvement and innovation that can build resilience and promote lifelong learning (Conway, 1997).

On the same note, we need to be mindful that while moving towards a more inclusive collaboration culture is a critical part of the resilience game plan, inclusivity should be not an absolute value. One needs to be cognisant that inclusivity is predicated on a certain reality of exclusivity in the society in which one seeks entry. Therefore, inclusivity may not be morally good or right in all situations or all instances. Perhaps we should aim to improve creative and critical thinking (Chiam et al., 2014), empathy, and tolerance within our workforce. In this regard, it would be helpful to analyse the reasoning process which governs the nature of the experience for those against vaccination and not enact the inclusivity in absolute terms. The point here is that inclusivity can be valuable if it participates in things that are fundamental in willing the good of others, without reducing the innovative potential of diversity. Related to this, innovation diffusion literature has shown us that innovation diffusion is best facilitated by 'open' networks, providing bridges to other cliques (Conway, 1997; Rogers & Bhowmik, 1971). These reflections gathered here complement the idea that we should move towards a more inclusive collaboration culture, but not necessarily in absolute totalitarian terms (i.e., a system of government that is centralised and dictatorial and requires complete subservience to the State), to build a resilient workforce that promotes lifelong learning.

Towards Inclusive Collaboration Culture

Despite the social differences and identities, as countries open post-COVID-19, more attention should also be paid to the shared context of common places and mundane experiences as 'context matters'. For instance, in Singapore, coffee shops where people seat and share their daily gripes, void decks, and common spaces where we see Malays holding weddings, Chinese holding their wakes, and children of all ethnicities playing together are part of Singaporeans' experience of growing up that most people can relate to. These are experiences that Singaporeans may have taken for granted and perceived as insignificant. We need to recognise that these are places that can help with the bonding, bridging, and linking of social capital and support systems that are what make them. These are places where the exploration of identities is formed. A better understanding of the serendipitous sharing of daily gripes, grumbles, and grievances that provides an equitable and open learning environment conducive for individuals, groups, and society outside their network might promote social change or identify other forms of assistance that one may not have thought of (Claridge, 2018).

We also need to be mindful of the challenges that often result from plurality associated with inclusion and diversity and the need for efforts of integration. In this, members occupying the bridging positions between the different communities in an inclusive collaboration culture are at an advantage. In an inclusive collaboration culture setting, members get to mingle and connect, and have accessibility to key

information diffusion paths that propagates lifelong learning. As already alluded to, new information is more likely to come from the serendipitous encounters outsides the network. Members can discuss problems together and come up with creative and effective solutions. This helps speed up problem-solving abilities, relieves pressures and promotes better well-being, and provides a safety net for someone to bounce back when faced with challenges, especially during the pandemic.

Chiam (2021) further explicated that once the members in the network start connecting, it is all about the *quality of the connections the members make and not the quantity*. In an inclusive collaboration setting, the idea pertains to choosing connections carefully as well as choosing diverse connections. The knowledge resides in these networks (as even though one may not be connected at a given time, invariably others in the network are, and they are reading, filtering, thinking) and that an integral part of the learning process is to be able to find and synthesise the most current information and recognise connections between ideas that may be found in many different places from any different people (Cross, 2007). To this end, good listening, collaboration skills, and not getting too attached to the idea that everything is going to work fine. Understanding the challenges and subtleties of the differences has been suggested as beneficial for the lifelong learning journey (Senge et al., 2014). Members of the network thus become a part of an *ongoing flow of learning*. As they participate in these spaces, they become one node, one actor/learner of many in the network that in aggregate is constantly learning (Richardson & Mancabelli, 2011). The above description of the inclusive collaboration culture is what individuals, leaders, and organisations do to bring this experience and process to life.

An inclusive collaboration culture encourages connection with others that promotes the building of network support that can boost a sense of belonging, happiness, knowledge, and better sensitisation of others' sociocultural, political, and situational viewpoints (Dinda, 2014). According to Dinda (2014), in inclusive collaboration culture, individuals are engaged in repeated interactions with others, and hence, social transactions are less costly. In her words, 'interactions enable people to commit themselves to each other, and thereby to knit the social fabric' (Dinda, 2014, p. 881). This helps one with a willingness to step into uncertainty, boost risk-taking, adapt to new realities, and strategic decision-making that will lead to better levels of innovation and productivity among workers (Dinda, 2014). All these provide the community with opportunities for developing personal and collective learning, well-being, and the necessary resilience for adapting to future shocks.

In this regard, like any facet of culture building, creating, and encouraging, a sense of belonging in the inclusive collaboration workplace should begin at the leadership level. The watershed work of Senge (1990) that laid an important foundation on learning organisation and system thinking through the systemic interrelationships in change processes still resonates today. Senge reminds us, that in a learning organisation, leaders are designers, stewards, and teachers. In a similar vein, Ferdman (2010) made the important link between leadership and creating cultures of inclusion, noting that the required skill sets for managing an inclusive collaboration practice involve increasing capacity for complexity. Inclusive leadership is required to advance climates and cultures of inclusion through social processes that encourage

inclusive practices and behaviours. The traits or characteristics of an inclusive leader include crossing boundaries to accelerate progress, being open, thinking broadly, communicating, favouring flexibility and choice, involving people, being willing and adept at naming exclusionary practices and behaviours, and making organic changes to overcome negative forces, facilitating positive interventions of inclusive thinking and action (Ferdman, 2010). For instance, members in the organisation should be allowed to freely seek others' opinions, be curious about who they are and what matters to them, treat them in ways that to them signify respect, and work with others to arrive at jointly satisfying solutions rather than impose one approach or direction.

Leaders not only need to pay attention to how differences are managed in organisations but also support the conditions that increase the likelihood that those differences will be noticed, valued, and welcomed (Ferdman, 2010). They are responsible to create sustainable, results-oriented strategies and tactics that underline how practising inclusion is an ongoing process involving multiple stakeholders at different levels of leadership as a collective, social process. They are responsible for building organisations where people continually expand their capabilities to understand complexity, clarify vision, and improve shared mental models. The learning organisations are where people continually expand their capacity to create the results, they truly desire; where new and expansive ideas are nurtured; where collective aspirations are set free, and where people are continually learning how to learn together. The organisational leaders should therefore be encouraged to create an ecosystem that affords inclusive collaboration partnerships to advance shared priorities of building an adaptive and resilient workforce.

To promote sustainable inclusive collaboration culture, efforts must be integrated into the social fabric of how the workplace does its business. Apart from embracing inclusive collaboration culture, reducing inequality and disparities, providing fundamental workers' rights to building their social-emotional support and social capital, such as allowing more intentional enculturation and learning opportunities for workers at all learning stage types and places to gain feedback from leaders and colleagues and removing discriminatory policies (Dinda, 2014; Ministry of Manpower Singapore, 2022). In this regard, one needs to be mindful that Singapore and, increasingly, other countries around the world are truly microcosms of the rest of the world; we are international and local, and the world is global and local. Before the COVID-19 pandemic, foreign talents, migrant workers and irregular migrants from neighbouring countries such as Malaysia have stepped in to fill the demand for workers in Singapore. Building an enduring and resilient workforce necessitates Singaporeans to commit to an open mindset and see themselves as members of a world community, knowing that we share the future with others. This requires powerful intercultural competence and empathy.

In this global village, the inclusive leaders need to identify shortcomings and gaps in the existing legal framework such as 'structural racism' and oppression beyond individual behaviour and be willing and adept at naming exclusionary practices and behaviours (Ryan, 2006). For instance, during the COVID-19 pandemic, numerous

shortcomings and gaps in the existing higher education institutions' legal framework saw that their international academics and students were put in limbo and lack the protection they need (see Han, 2021). While technological advances and affordances such as Zoom and Teams platforms would have allowed the international academics to conduct their lesson virtually from anywhere, and for students to learn from anywhere, some strict archaic regulations such as unless they are 'granted compassionate leave, they will not be allowed to teach their classes remotely, even if these online classes could technically be taught from anywhere' (Han, 2021). Such rigid policies that do not allow their international academics to teach their class remotely even if these online classes could technically be taught anywhere in the world poses extra challenges as classes had to be cancelled or others had to trouble other colleagues to cover their work. This is just one part of the equation. Upon their return from their home country, even though they could technically work from their home when they are back in Singapore, they are still required to take their leave for their quarantine period as the university does not allow work from home during the quarantine period. Such practices may not be desirable as they do not forge an inclusive culture that promotes resilience.

The above discussion and reflections demonstrate the non-inclusive culture in our local higher education institutions that appears not isolated. A recent report by Changamire et al. (2021), similarly found that US university internationalisation practices and policies reproduce and reinforce cultural and social racism. 'Rather than "enriching" our campuses with "diverse" groups who all experience dignity and respect at the university, we find the policies and practices around internationalisation on campus are "not only unhelpful but exacerbated the very conditions" around exclusion, discrimination, and the inequity they ostensibly seek to redress' (Changamire et al., 2021).

Conclusion

In conclusion, the book chapter has shown that having a more diverse workforce that practises inclusive collaboration culture increases participation in lifelong learning and can build a resilient workforce. However, we have seen that even higher education institutions, the core of where learning takes place, fall shorts in their inclusion practice. The need to reassess if our organisations and their conduct of walking the talk of being inclusive is real. A first step towards being more inclusive is to acknowledge international academic identities and experiences with discriminatory regulations in official discourse and strategies (Buckner et al., 2021). Higher education institutions and their administrators need to start educating themselves about the realities and consequences of their legislation and policies that appear to be empty concepts with negative biases (Buckner et al., 2021). Organisations could be more inclusive in making a special exemption to allow their foreign workers who can travel to work from their home country. This would elevate the mental anguish of many of our workers who had family members abroad and would have helped build a sense of

the organisation as being caring and developing a trusting relationship. The fluid processes associated with inclusive leadership strengthen how organisations foster the engagement of organisational members across groups, functions, and or levels to stimulate change within work settings and how they build their competency as they embrace globalisation and seek to reconcile the competing commitments to self and others.

These sources of evidence remind us that we all have the potential to be biased if we are not careful and self-aware of our own conscious or our own unconscious biases that are tightly associated with how we assimilated what is the norms in our context. We need to be mindful that we need to include multiple perspectives, engage many others and leverage our differences. As the COVID-19 pandemic has shown us, we learn from the learnings and insight of other countries so that we do not repeat the mistakes of what others have gone through and get inspiration on how we can be more creative and innovative to overcome the current pandemic challenges and accomplish our ambitions to recover from this pandemic as a resilient society.

Organisations need to embrace diversity, hire people of different nationalities, races, and gender, and create an environment where all perspectives and experiences are welcomed and valued. Everyone should feel that they are truly welcome, be given a voice, both in managing the boundary and in defining (and redefining) norms, values, and preferred working styles, be afforded the right environment and trust that the environment is safe. A safe environment promotes a sense of belonging and openness that promotes fluid and productive discussions among members. It is in such an environment that a resilient workforce that promotes lifelong learning flourishes.

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Chapter 10
Job Crafting and Learning of Restaurant Cooks

Silin Yang

Abstract In the changing nature of work, workers engage in job crafting to improve person–job fit between job characteristics and their own abilities, needs and preferences. Based on two case studies conducted in Singapore, this chapter combines ideas from theories of "job crafting" and learning to explore the job crafting practices adopted by cooks in the restaurants, and the relationship between job crafting and learning. Our findings indicate that although the cooks did not know about the concept of job crafting and it was not a conscious choice for them to craft their jobs, they are actively engaged adopting different forms of job crafting within the constraints of their work environment. The concurrence of job crafting and learning is shaped by the readiness of the cooks, and learning, job crafting and context are entwined. Our findings also reveal that the different forms of job crafting are interconnected and mutually reinforcing in a variety of ways.

Introduction

In the changing nature of work, workers engage in job crafting to improve person-job fit between job characteristics and their own abilities, needs and preferences (Döbler et al., 2021; Tims et al., 2012; Wrzesniewski & Dutton, 2001). Job crafting is a relatively new concept and gaining traction in recent years, in which it is different from the traditional models of job design, where structural features of the job are created and enforced by the managers. Job crafting is a process through which workers proactively redefine and redesign their tasks, relationships and perceptions to create a work environment that enables to them to achieve both job and personal goals. According to Wrzesniewski and Dutton (2001), there are three forms of job crafting—task, relational and cognitive crafting. The present chapter draws on data from two sources: (1) one out of the six case studies drawn from a semi-ethnographic qualitative research project on assessment for the changing nature of work (Bound et al., 2016), and (2) interviews with one restaurant cook not involved in the above-mentioned research

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project, to investigate the job crafting practices of restaurant cooks in Singapore, and how job crafting necessitates and promotes learning.

Learning

Drawing on the works of Lave and Wenger (1991) and Engestrom (1999; 2001), learning can be understood in relational terms, as a process of becoming competent and gaining recognition as a member of the community and/or organisation at the individual level, and by which learning is situated in a network of relations where knowledge and skills, authorities, resources and artefacts are distributed (Hager, 2013, p. 90). Learning may also be perceived as "the process by which human capacities are expanded" (Bound et al., 2019; Evans et al., 2006) in, for and through the workplace, thereby having a social nature. Workers learn and engage in ongoing development through their work activities and interactions (Billett et al., 2021a, 2021b; Dochy et al., 2011). This is coherent with the cultural theory of learning, which mainly involves "learning cultures" that are described as "the social practice through which people learn" (Zukas & Kilminster, 2012.). The essence of the theory paints learning, as existing inside the social communications between individuals within the "learning culture", and also existing as a result of such social interactions (Zukas & Kilminster, 2012). In this respect, the social nature of learning cannot be denied.

Right at its core, learning is seen as a process that occurs as we undergo tasks and engage in interactions, be it social or technical etc. In more detail, our daily lives are full of conscious or unconscious learning activities that we engage in, as human beings are "pre-programmed to learn" (Hallam, 2005, p. 1). This has been referred to as microgenetic, or ontogenetic development, which learning essentially occurs across the lifespan, with consideration of the experiences and interactions one engages in during this time.

Job Crafting

In recent years, the pursuit for work experiences permitting employees to have a voice in shaping the significance of their job, and generating satisfactory work outcomes for the functioning of their organisations is taking precedence (Singh & Rajput, 2021a, 2021b; Pratt & Ashforth, 2003; Wrzesniewski et al., 2003). The evolving dynamics of work suggests the potential of job crafting to serve as a research lens that explores how work in organisations is relevant to the decisions of individuals responsible for it. There is heightened interest in the way employees customise their own job, since employees working in contemporary organisations likely have at least some latitude to modify and craft their jobs (Oldham & Richard Hackman, 2010). Employee job crafting embodies the essence of proactiveness in elements of structuring, enacting

and modifying the boundaries of their job, task and role (Grant & Parker, 2009). In essence, this concept embraces the ways by which employees are placed in the "driver's seat" and tapping into opportunities by actively changing their tasks and interactions with others at work (Berg et al., 2010). A noteworthy feature of this conceptualisation as discussed by Wrzesniewski and Dutton (2001) is that it is not inherently "good" or "bad" for an organisation. Its effect is dependent on and varies across situations.

There exists three central forms of job crafting (Fig. 10.1) whereby job crafters shape the boundaries that define their jobs (Wrzeniewski et al., 2013). Firstly, task crafting engage employees in the process of altering the form or number of activities and can be further interpreted as changing the demands of their job (Demerouti et al., 2012). This reference to job crafting comprises of adding or dropping tasks, making adjustments to time or effort spent and redesigning features of the task. Secondly, Wrzesniewski et al. (2001) theorised that the reframing of relational boundaries defining interpersonal interactions involved in carrying out tasks can be termed as relational crafting. A noteworthy aspect of relational crafting is that it indicates the extent job crafters exercise discretion over whom they interact with while performing their job (Laurence, Fried, & Yan, 2010). Thirdly, cognitive crafting is the altering of cognitive boundaries closely linked to ascribing meaning or purpose to the tasks and relationships that encompass their jobs (Wrzeniewski et al., 2013). The key characteristics of the above concepts of job crafting emphasise that in the pursuit of finding meaningful work, employees are capable of reframing what the job (and its tasks) should be (Lu et al., 2014; Wrzesniewski & Dutton, 2001).

Within a formally designated job, employees are often motivated to continually tap into opportunities by actively changing their tasks to better fit their motivations, strengths and passions (Berg et al., 2010; Shaheen & Mahmoud, 2021). Job crafting encompasses deep implications for the lives, and psychological health of employees' as work can deliver resources vital for survival, access to relational control and the experience of autonomy (Blustein, 2008). A study by Saragih et al. (2021) has found

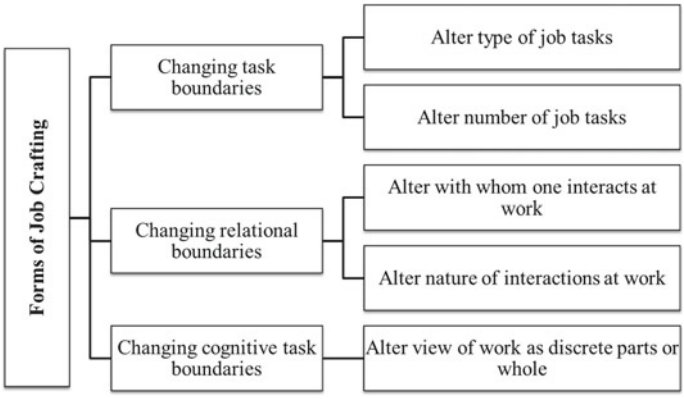

Fig. 10.1 Forms of job crafting

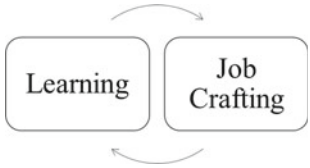

Fig. 10.2 Relationship between learning and innovation

that job crafting mediates job autonomy and well-being, allowing employees to have better well-being as they are able to redefine their job to fit their needs during the COVID-19 pandemic. Kristof-Brown and colleagues (2005) posit that when job characteristics are in tandem with employees' personal needs and abilities, there is greater likelihood that employees experience better person-job fit. Consistent with this view, academics discovered the positive connection between job crafting and its effect on flourishing work engagement levels. A study by Tian et al. (2021) found that job crafting behaviours are positively related to creative performance through increasing work engagements. Therefore, a "job" is transformed into a "calling" as employees cultivate a positive sense of meaning and identity in their work (Kamaeswari & Mohideen, 2016; Lyons, 2006).

It is difficult to separate learning and job crafting practices at workplaces because individuals learn while they change their tasks and interaction with others at work. Learning is "an integral part of our everyday lives" (Wenger, 1998, p. 8) which arises all of the time and everyday as individuals engage in thinking and acting, and is embedded within, everyday workplace activity and the technical and social relations of production (2021b; Billett, 2015; Billett et al., 2021a; Fuller & Unwin, 2011). In this respect, learning and job crafting are hence deeply social and closely interwoven, which implies strong similarity in the attributes of learning and job crafting at workplace. Learning is not separate from job crafting: there is co-occurrence between job crafting and learning (see Fig. 10.2).

Purpose of the Study

There were a few studies done on job crafting practices (Fuller & Unwin, 2011; Kamaeswari & Mohideen, 2016; Shaheen & Mahmoud, 2021; Tian et al., 2021; Wrzesniewski & Dutton, 2001), but little is known on the relationship between job crafting and learning. Hence, this chapter seeks to investigate the job crafting practices of restaurant cooks in Singapore, and how job crafting necessitates and promotes learning.

Methodology

Data Collection

The finding of this chapter is based on two case studies. The first case study was one out of the six case studies drawn from a semi-ethnographic qualitative research project "Assessment for the changing nature of work" (Bound et al., 2016). In this project, the six case studies are very varied and span across different industries: workplace learning facilitators, restaurant cooks, rota commanders of a fire-fighting unit, resident doctors, aircraft engineers and IT network engineers. Being a semi-ethnographic study, observations, analysis of company documents, semi-structured interviews and small focus group discussions constituted the data for the six case studies. A total of 105 pieces of data were collected from the six case studies. The data from this project was originally collected to understand how learning and assessment has been carried out (i.e., designed and implemented) in various learning sites including the classroom, laboratory, centralised training kitchen and training simulator. However, the topic of job crafting also emerged during our analysis. For the purposes of this chapter, the case study selected herein focuses on the lived experiences of the cooks in a restaurant kitchen setting of a restaurant chain operator based in Singapore. The cooks (pseudonyms Ian, Dave, James) in this restaurant serve mainly western cuisine. The researchers carried out two days of observation and conducted one focus group session and three interviews. All the interviewees were male and have been working at the restaurant from one year to over ten years.

The second case study is based on in-depth interviews with a 19-year-old female polytechnic student (pseudonym Mag) with close to two years of working experience in the food and beverage industry. At the time of the interviews, she is currently an intern attached to a restaurant as a junior cook serving Japanese cuisine in Singapore.

All participants involved in the studies were briefed on the purpose of the study and were informed that their participations were strictly voluntary and anonymity safeguarded. The participants have the rights not to participate or withdraw from the study any time. This study was also approved by the Ethics Review Committee at the institution where the researchers were. The approved research protocol included informed consent by the participants, controlled storage and access of data, and de-identified data for analysis.

Data Analysis

Interviews and focus groups were recorded and transcribed. The researchers read and reflected on these as the transcribing was completed. The transcriptions, documents and field notes from the observations were imported into NVIVO (software to assist with organising and analysing qualitative data). An initial reading of the transcripts and the observation notes showed clearly that the interviewees described examples of

how they modify and craft their jobs. A thematic approach informed by Wrzesniewski and Dutton (2001) concept of job crafting and Billett's (2011) work on learning was adopted to code the data. Given that Wrzesniewski and Dutton (2001) define job crafting as changing the task, relational and/or cognitive boundaries of a job, job crafting actions disclosed in the interviews were initially coded by each of these three boundaries. This helped maintain consistency with the literature and to provide readers of this study an easy framework to understand and utilise the data. This strategy is also consistent with Berg and et al.'s (2010) job crafting data analysis approach. Additionally, more than one code was often assigned to a single piece of data if it met the criteria for multiple codes. Throughout the analysis, relevant excerpts in the data were constantly summarised, sorted and compared in order to ensure the codes that were used in the beginning of the analysis were still relevant after many rounds of passes through the data.

Findings

All three forms of job crafting are illustrated in the two case studies. The different job crafting practices adopted by the cooks in the two restaurants and the relationship between job crafting and learning will be the focus of the following discussion.

In the first case study, to fulfil operational needs like menu changes and quality assurance, this restaurant chain conducts its own in-house training and implement assessment sessions for cooks who are deployed at the various restaurant outlets. The goal of the training is to enable the cooks in the restaurants to deliver the desired quality and consistent standards of new menu items in a timely manner. The cooks are required to demonstrate what they learned from the Development Chefs after the training. The cooks are also expected to teach their colleagues in the outlet kitchens what they have learned. Development Chefs would then visit these outlet restaurants to conduct an on-site assessment on the menu items. A range of different job crafting practices are reported in the data. Figures 10.3 and 10.4 represent the job design of the cooks in this restaurant before and after crafting, respectively. The tasks stated in Fig. 10.3 are structured as separate entities, while the tasks in Fig. 10.4 are grouped together as one collective effort to attain the goal of achieve the requirement of the assessment and to meet customers' needs by delivering the desired quality and consistent standards of menu items in a timely manner. Although the cooks did not know about the concept of job crafting and it was not a conscious choice for them to alter their jobs, they are actively adopting job crafting practices.

The role of the cooks is to deliver quality menu items in a timely manner. An example of task crafting adopted by the cooks is that they improve the quality of the food items by incorporating new ideas into how the food is being prepared and cooked. Ian described how he makes changes to the dishes:

> *After eating, we'd know that "Oh, I can bring out this flavour". I can use this Tomyam flavour in the preparation. This is the new thing I tried two months ago, in the recent two months…*

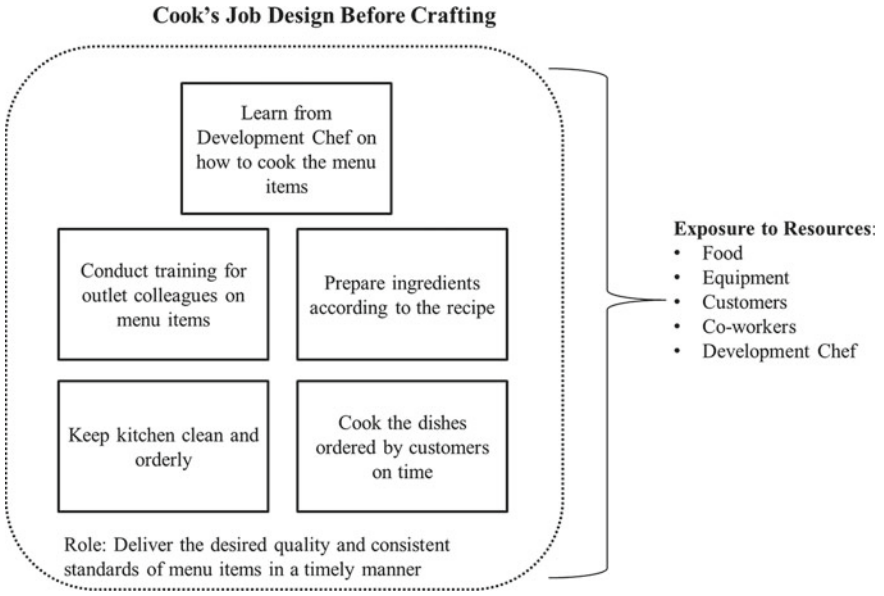

Fig. 10.3 Cook's job design before crafting in first case study

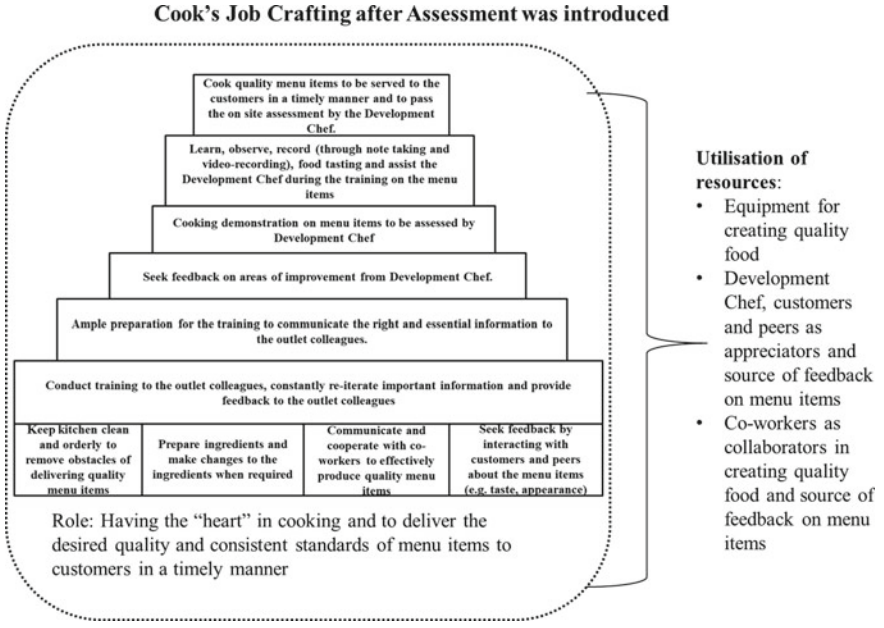

Fig. 10.4 Cook's job design after crafting

Sometimes, I'd have my own ideas. Every cook has his own innovation. Every cook has his own innovation and idea, and a lot of items will be made.

The cooks in the restaurant often seek feedback about the menu items (e.g., taste, appearance) by interacting with their customers, bosses, reporting officers and co-workers. They also communicate with friends from the same industry to garner new ideas to create quality dishes. In the following example, Ian outlined whom he interacted with to garner new ideas to improve his cooking.

I asked my manager to try. They said that "this was not bad". Because we developed it, we would let them know and let them try. Because ultimately, I could find it good, but others could find it ok ok. It could be that the person likes the flavour very much, and he would find it "wow, really good!", he'd have such reaction. Usually, when we study [formulating a flavour], I'd ask them to perform testing when I have better confidence [on the output], I have confidence, and can let them try. I'd ask them to try.

I'd chat with Chinese cuisine friends. Because sometimes we can study and compare the sauces used in both Chinese and western cuisines. For example, they tried some new Coffee Chicken today, and they added this and that, then we'd see if we can change and let it evolve into another type of sauce. These things occur.

We ask our customers, we'd ask them "is the food ok today?"

Cognitive crafting was typically common too. It was reflected in the following accounts of the cooks when they build up resilient perceptions by envisaging underlying challenges in a positive manner:

Because of the desire for more challenging things. Because I used to work on Chinese cuisine, and then I was actually fascinated with preparing western food, like the style, the arrangement and the like. I mean, it's more refined. I mean, like that. Look, for western cuisine, on first look, you could feel it, wah! Very beautiful. And then the appearance is good. And then it turned out that I had that mindset to learn preparing western dishes. Previously, for myself, when we prepared Chinese cuisine, the arrangement and appearance were not as refined as those of western cuisine, as people would say. For western dish, every part of it, they'd do it very well. Each part needs to be delicately prepared. Chinese cuisine is not as refined. If it's hawker [food], it's not as refined. If it's restaurant, then it's refined. That's not the case for western food. For western food, we need to make it aesthetically good, very good in appearance. This is an aspect that I challenge myself with. Because western cuisine is quite challenging. Because you need to do every part very well…….I require perfection, I want to reach that level of perfection…… This is my respect for the customer. If I can't reach that level, it means I'm not doing it wholeheartedly and with utmost diligence. This is my mentality. I can't accept poor quality from myself.

In the second case study, Mag described examples of actions she has taken to make her job as a junior cook more meaningful and fulfilling within the task, relationship and cognitive job crafting boundaries. Figure 10.5 illustrate the tasks she is required to complete as a junior cook in the restaurant. Table 10.1 indicates the exemplars of the job crafting practices adopted. The author would like to point out that the clear division among the different forms of job crafting practices in Table 10.1 is artificial and simplistic as these activities are interconnected (which will be discussed in the following section), but it is clearer to differentiate and cover them in the three forms of job crafting.

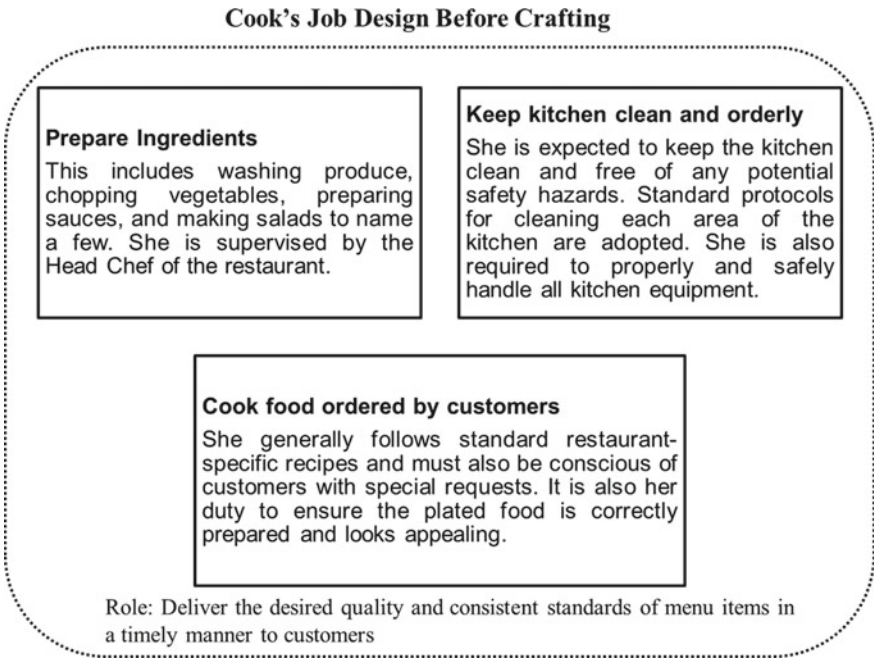

Fig. 10.5 Cook's job design before crafting in second case study

Table 10.1 Exemplars of job crafting practices adopted

Job crafting practices	Exemplars of practices adopted by the cook
Task crafting	• Prioritising the critical tasks when there are too many orders from the customers • Taking up additional responsibilities like helping out at another station when there is a shortage of manpower • Use of tools (e.g., notebook) to record process of food preparation
Relational crafting	• Seeking advice and feedback from head chef on areas of improvement • Develop collaborative relationships with peers during break time and getting to know them personally
Cognitive crafting	• Understanding how the whole restaurant works, and seeing oneself as an important contributor to the restaurant • Envisaging the underlying challenges positively

One common practice where she engaged in task crafting was to take on additional responsibilities that were not part of her original job. For example, she takes on extra tasks by helping out at other stations when there is a shortage of manpower.

If there are no orders on my station, I will go out to the next station to help out. Sometimes I'm at tempura station, sometimes at stir-fry or yakiba station. Sometimes I have to juggle between one or a few stations. Impromptu.

However, Mag also commented that not all cooks are willing to help out at other stations, given the pay of the job, it would not be rational to go beyond the job scope.

> *Working hours are really long. Working in the kitchen is really tiring and we are paid peanuts. That's why some of them are not keen to do more. They just do the minimal, the same task everyday, and get paid each month.*

She is not allowed to have direct interaction with the customers as there was a clear division of labour between the service staff and the kitchen staff in the restaurant. Service staff are commonly known as waiters and waitresses who will greet customers, take food orders, bring food and drinks to the tables, as well as collect payment and return the change. While kitchen staff are responsible for preparing and cooking meals for restaurant patrons. Hence, other chef is the only source of feedback. A cordial relationship with the other chef allows her to seek advice from them.

> *We are not allowed to interact with the customers. The people in the service area will do so. If I make mistakes, the Head chef will then give me feedback at the end of the day, and let me try to cook the tempura again. I will also try to get more feedback from other chef. They have been really supportive, help me when I make mistakes. They got my back covered. When I need advice, they will be willing to help me…At first, I started out shy, but I bonded with the staff gradually.*

Cognitive crafting was also reflected where she describes how the perception of her role has shifted. Rather than thinking herself as only a helper in the restaurant, she sees herself as an important contributor to the restaurant.

> *In the past, I see myself as only a helper in the kitchen. But now I see that I am important. I am part of the team. Whatever I do will have an impact on others, will affect the rest. I need to do my work well. You really become a part of the restaurant. In the kitchen, one person's action will affect the rest. If you never prepare the ingredients, the other chef cannot cook. If you miss something, you end up hindering other stations.*

Examples of processes of learning are evident in the above two accounts. Particular changes in activities support and augment learning through work. These include, for instance, Ian refers to innovating new ways of preparing and cooking dishes as a major part of his role as a cook, and there is a group of individuals (i.e., managers, customers and friends) with whom he discusses, gets feedback and ideas from. Innovating new ways of preparing and cooking dishes is a form of activity that is inherently generative of learning. That is, Ian is required to deploy what he knows to come up with new ways of preparing and cooking the dishes. When interaction with his managers, customers and friends is an extension to what he knows or generation of new knowledge, learning is likely to be developing further and honing and refining what he knows. Ian is hence engaged actively and intentionally in the learning process. Similarly, Mag takes on additional new tasks such as helping out at the yakiba station and actively seeking feedback from other chefs. Engagement in these new work activities and interactions with others at work is generative of new and rich learning.

Discussion

An analysis of the findings is illustrated in Fig. 10.7. From the two case studies, it become apparent that learning, job crafting and context are entwined. Context here refers to the situated practices in the workplace. Through learning, we develop increased capability to act differently in the environment (Bound et al., 2019; Owen, 2018), and actively remaking their practices (i.e., job crafting). Job crafting and learning should not be looked upon as isolated processes, but as phenomena in the larger context. Unlike the cooks in the first case study, there is no opportunity for Mag to gather feedback from her customers on the food, as the restaurant does not allow her to interact with the customers. There is a tight division of labour between the cooks and the service staff. She recognises this strict constraint, therefore decides to approach other Chef for feedback on the menu items. Although her doings are constrained by the practices of the restaurant, this may also suggest that she is more motivated to work against these constraints by getting feedback from other chef, which in turn is a form of job crafting and learning. This illustrates that context mediates the learning and job crafting practices of workers, where motivated individuals actively engage in crafting their jobs () within the constraints of their work environment.

The clear division between the different forms of job crafting is simplistic as the three forms of job crafting are interconnected and mutually reinforcing in many ways. For instance in the first case study, rather than seeing his role as simply preparing food that served customers' needs, the cook (Ian) sees that ensuring the food is tasty and aesthetically good is a form of respect for the customers, thus changing the cognitive task boundary. This in turn resulted in him taking on additional task by trying out and

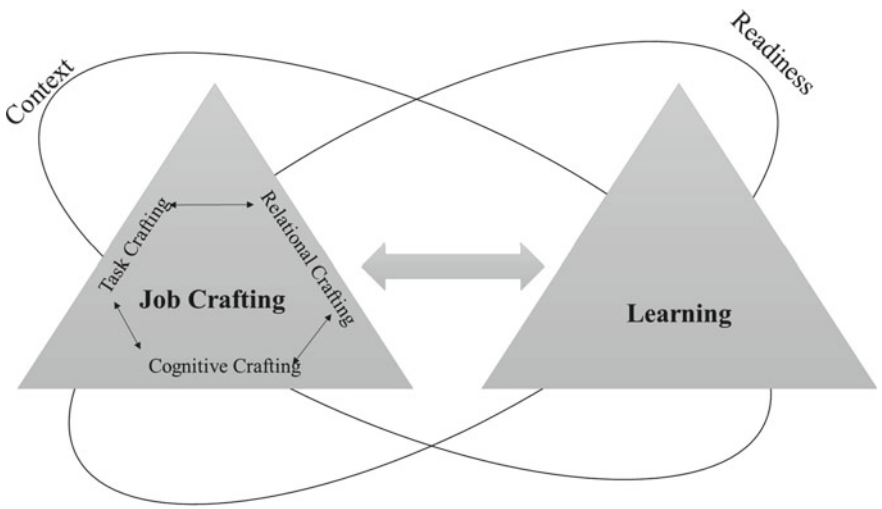

Fig. 10.7 Analysis of the findings

practising new cooking techniques and recipes (e.g., Tom Yam flavour), an essential part of a professional chef who produces high-quality food. He went on to engage in interaction with his customers, bosses, reporting officers and co-workers to gather feedback on the new dish. This is indicative of the interconnection among the three forms of job crafting (see Fig. 10.7). Similarly for Mag, as she sees herself as an important contributor to the restaurant, she takes the initiative to help out at other stations when there is a lack of manpower.

Our research evidence also revealed that concurrence of job crafting and learning will be shaped, to some degree, by the readiness of the worker, that is what they know, can do and value. Engagement in job crafting and learning requires "individuals to take some agency and decisions about how, when, where and why they engage" (Cairns & Malloch, 2011, p. 4). For instance, not all cooks engaged in job crafting as indicated by Mag that some of her peers are not willing to take on additional responsibilities by helping out at other stations. On the other hand, Ian had a desire to learn that saw him engaged with a group of like-minded individuals (i.e., Chinese cuisine friends) outside of work to garner new ideas to create quality dishes. There is evidence of the way individuals' biographies, values and dispositions shape their thinking and acting. Learning and job crafting only occur when the individual is capable of and interested in learning and crafting his job. As Billett et al., (2004, p. 237) explain, "…the quality of their engagement in these practices will not be uniform. Full-bodied participation in one social practice can be contrasted with reluctance in another". Individual's biographies, values and dispositions shape their decisions about how one will engage in work practices (Fuller & Unwin, 2017) and job crafting.

Limitations of the Study

This study is not without limitations. The study is drawn from two case studies exploring how the cooks in a restaurant chain craft their jobs and learn at the workplace. Results can be different in other restaurants with a different organisational context; hence, care should be exercised not to generalise this study findings to the entire population of restaurant cooks. It is recommended to do research in more organisations with different organisational context with another composition of restaurant cooks with a different extent of job experience. In addition, a longitudinal study examining the job crafting practices and the learning processes of restaurant cooks can be a worthwhile future research topic to undertake.

Conclusion

This book chapter reports the findings of two case studies focused on understanding the techniques of job crafting and the relationship between job crafting and learning.

Although the cooks in the restaurants are active designers of their work by adopting different job crafting practices (i.e., task crafting, relational crafting and cognitive crafting), the kinds of opportunities afforded and the support for job crafting and learning within the workplace are important. Therefore, more attention is required at an organisation to provide a supportive work environment that encourages, supports and rewards learning and job crafting.

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Chapter 11
Opportunities in a Crisis: Boundary Objects for Undergraduate Internship Learning

Shien Chue

Abstract Internship is a high-impact form of experiential learning. Learners gain valuable applied experience and connections in professional fields through work-based exposure to broad range of operations within an organisation. Positioning workplace activities as internship learning experiences, the focus of this chapter is to examine the boundary objects that assisted and hindered interns' boundary-crossing ability at their internship workplace. Taking a phenomenological approach in this study, our findings from analysis of interviews of undergraduate interns ($N = 38$) explicate how digital technologies as boundary objects (i) structure work processes of interns (ii) situate internship workplace practices within organisation's business functions (iii) integrate interns into a community of practice. Hence, there are learning opportunities for undergraduate interns when they are active co-participants in work processes, bounded with technologies and supported by colleagues within the communities in which they perform their internship work duties. The innovation in this chapter is the novel use of boundary objects to examine internship learning during the pandemic period and to offer practical strategies for enhancing internship learning at the workplace for the post-pandemic era.

Introduction

Internships are common and accredited university programmes where students are expected to engage in learning through participation in suitable activities within an actual paid work context (Hardie et al., 2018; Knourse & Fontenot, 2008). This is an exciting albeit very stressful period of authentic learning in the profession as a beginner or novice. The notion of transition during this fixed time frame of internship placement can have long-lasting impact for individual and occupational identities (Fuller & Unwin, 2009; Goodwin & O'Connor, 2009). As a pedagogical site, it disrupts our conventional understanding of static classroom learning and teaching to locate learning at the intersections between universities and the workplace (Symes

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et al., 2000). There is an often unsettling mixture of formal knowledge from theory as well as informal practical knowing that dynamically shape the context of learning or indeed what is even defined as success at work. The potential of internships as ground zero for understanding how students navigate the complex terrain of workplaces for access and opportunities for learning (Pang, 2015), becoming agentic learners and subsequently professionalising themselves cannot be emphasised more (Edwards, 2007; Fenwick & Edwards, 2013; Virtanen & Tynjala, 2008).

This chapter examines how interns engage with boundary objects—whether individually or collectively, to develop learning strategies at the workplace. This perspective on developmental learning at the workplace is part of a larger research project effort to develop a framework for internship learning from a socio-material perspective. To fill the current gap on how neophytes are enculturated into the shared repertoires and practices of professionals at the workplace, this chapter presents empirical data to offer new insight on how learners can engage with boundary objects for professional workplace learning.

Within the boundary crossing from university to the workplace, young adults engage in professional development that is also understood as a meaningful crisis as they grapple with identities, personal beliefs, skills and professional role expectations (Amenduni & Ligorio, 2017; Jarvis-Selinger et al., 2019). Undoubtedly, internship can function as a possible career planning strategy for undergraduates (Sidelinger & Banfield, 2007) and offer undergraduate the opportunity to gain experience and practical skills for future employment. However, it is not uncommon for these learners to experience little alignment between what is taught at university and what is experienced at the workplace (Nduna, 2012).

Critically, for interns or newcomers in the industry sector of communications, they are expected to engage in complex tasks such as improving and applying communication and publicity strategies, creating information programmes, advertising activities and events, and sustain media relations on behalf of firms, governments and other institutes (D'Amato, 2019). These tasks can be daunting for newcomers of the industry. Consequentially, this expectation places a huge demand on interns for a broad range of knowledge from the mastery of specialised bodies of knowledge, technical analytical abilities to innovation and creation of new knowledge and ideas. Yet, it is difficult to rise above the challenges described above as the wider communications industry is still struggling to put together specialised bodies of knowledge, education and training to enhance professionalism (Brunton & Jeffrey, 2013). Our research question therefore asks (1) to what extent do workplace tools function as boundary objects for interns placed in the industry of communications? (2) How do interns negotiate these boundary objects, and with whom? (3) How might workplace tools as boundary objects be resources for interns' learning and development at the internship workplace?

Taking a phenomenological stance to analyse audio recordings of interviews, our results highlight technological tools as boundary objects during internships for interns to engage in learning. The following section reviews key research on boundary objects and workplace learning to underscore the relevance of digital technologies for integrating young adults into the workplace. From the presentation of excerpts from

empirical data to demonstrate boundary-crossing activities encapsulating workplace learning of undergraduate interns, researchers and educators will be better placed to understand how undergraduates as aspirants to careers in media communications, participate and learn on the job during internship placement.

Literature Review

Boundary Objects

The choice of everyday practice for studying boundary objects in this chapter responds to the need to investigate prevailing discourses on internship learning from the everyday realities experienced by the learners in their educational context—internship workplace, a neglected space of learning. With practice understood as embodied, collective actions (Engeström, 2001; Lave, 1988; Wenger, 1998), internship learning can be understood as educational practices that are coherent and developmental over time. Yet at the same time, belonging to complex, dynamic context of everyday learning at the workplace.

With a practice-based approach, array of tools, resources, documents, regulations and spaces need to be foregrounded to make visible possible everyday practices in specific communities. By doing so, relationships develop among tools, technology and learning (Säljö, 2010) and potentially transforms 'how we teach and learn as well as how we come to interpret learning' (Säljö, 2010, p. 53). Situating learning and teaching into the material world—that is, its physicality as well as its social organisation—foregrounds these activities as embedded within sociocultural activities that are bound to tools that make them possible (Verillon & Rabardel, 1995). This interest in the overlap among material, cognitive, cultural and social aspects of teaching and learning has recently been renewed in works that specifically take a socio-material lens on workplace learning (Fenwick et al., 2015; Johri & Olds, 2011). The upside of such a socio-material perspective is the affordance for making sense of how boundary objects interweave with contemporary forms of internship learning.

Boundary objects defined in this chapter consist of a broad range of artefacts that 'are plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across sites' (Star & Griesemer, 1989, p. 393). Localising these objects within the internship workplace would refer to the collection of artefacts such as numbers, tools, knowledge management systems and machines that individuals manipulate, measure or create. There are numerous examples of boundary objects in existing literature, ranging from prototypes, design sketches and accounting reports to enterprise resource planning systems (Briers & Chua, 2001; Levina & Vaast, 2005; Pawlowski & Robey, 2004). Artefacts that act as boundary objects possess the properties of modularity, abstraction, accommodation and standardisation (Pawlowski &

Robey, 2004; Star & Griesemer, 1989; Wenger, 1998). Furthermore, it has been cited that effective boundary objects are those artefacts that are tangible, concrete and accessible (Bechky, 2003; Carlile, 2002). Boundary objects change practices across occupational and professional boundaries by affording focal points through which knowledge is shared, integrated and ultimately transformed (Thompson, 2005).

Application of boundary object concept includes analysis of multidisciplinary collaboration in healthcare (Keshet et al., 2013), vocational education and training programmes (Bakker & Akkerman, 2019). Specifically, in professional domains where internships are part of the professional qualification trajectory, boundary objects offer broadened conceptions of how trainee doctors learn to practice medicine (Bleakley, 2006) as well as how boundary object in the form of portfolios can afford learning opportunities for teacher trainees (Jahreie & Ludvigsen, 2007). However, much less is known about how boundary objects operate at the workplaces for the undergraduate intern seeking to learn about the communications and media production industry. This is not helped when the idea of internship does not have a stable character in these industry sectors and little is known about how opportunities for learning are systematically organised, if indeed they are. Within this tension, interns assume responsibility for making the most of the experience, but yet may not have control over access to meaningful experiences that they value (Corrigan, 2015), thus threatening the quality of internship as a part of learning and professional development.

Method

Participants

This study is part of a larger research project investigating undergraduate internship learning from a socio-material perspective. The project received ethical approval from Nanyang Technological University Institutional Review Board. For this chapter, the focus is turned on penultimate year communication studies undergraduate interns ($N = 38$) who participated in semi-structured interviews during the second and fourth months of their internship placement during the pandemic year of 2020. Owing to the increasing severity of the pandemic during their six months internship period from January 2020 to June 2020, work mode for interns participating in this research project varied depending on the organisations that the undergraduates were placed in. Specifically for this group of interns, all of them were able to perform their internship at the workplace at the start of their internship but had to transit to working from home during the final two to three months of their internship. Names used in section of results are pseudonyms to ensure confidentiality and anonymity of research participants.

Data Collection

During the interviews of about an hour duration each time, collected data focused on learner's motivations for internship, on-boarding processes in the workplace, the nature of work performed at the workplace, tools used during their work, as well as challenges encountered and how they coped with these challenges. Critical within these interviews was the elicitation of experiences of the intern as a neophyte, explication of learning episodes related to digital technologies at work and access to significant work practices.

Data Analysis

Audio recordings were subsequently transcribed and analysed alongside written reflections of the interview transcripts and began with a period of open coding using NVivo qualitative analysis software. Our research team revisited the codes as data collection proceeded and within the larger research team, members refined, negotiated categories through iterations of analysis. For the excerpts drawn for this chapter, the first stage of analysis entailed a thorough immersion of oneself within the data, which included listening to recordings of the interviews, readings and re-readings of transcribed interviews. This was part of the inductive analysis to identify common themes that cut across participants. Salient at this stage was the myriad of technologies reported by interns as embedded within the workplace experiences explicated during the interviews which motivated a deeper analysis of how these digital technologies were imbricated within the lived experiences of the interns during their internship. Hence, the unit of analysis during the second stage of analysis focused on the technological tools mentioned by the intern across work events and activities described by research participants. In doing so, this chapter adopted the point of view of the intern as a reference which aims to document a specific way of making knowledge emerge (Dieumegard et al., 2019). Rich descriptive accounts of subjects were written and discussed during team research meetings, using references to the literature that framed the analysis for this chapter. In doing so, signals the final stage of analysis where research team members discussed emergent meanings about the challenges along the timeline of boundary objects usage and over different types of work engagements as revealed by research participants during the interviews. Reconstructing the dynamics of the intern's coupling of boundary objects with the dynamic work environment, the next section presents findings of how interns negotiated with boundary objects and how boundary objects afforded interns opportunities to learn on the job.

Results

With technology understood as part of the complex process through which enactment of work is accomplished, it is useful to first set forth the types of digital tools interns had access to during their internship placements. Interns revealed digital tools were embedded within their daily work and described challenges associated with learning how to use them at the workplace. While interns at different organisations had different levels of access to these technologies, common across the interns was the use of technology as dependent on the nature of the internship job scope. Drawing upon interview data where interns described their daily work and challenges, the following table summarises the types of technological tools present within the business organisations of the interns (Table 11.1).

Interns in media monitoring firms reported the use of content management systems as an integral part of their research reporting work alongside the use of Excel spreadsheets to track and organise information for and of their clients. Interns were also using social media platforms for content creation and often reported using Google and watching YouTube videos to gather information for solving work-related technical issues such as how to create and upload media postings, conduct search engine optimisations as well as conduct research for their firms' business clients. Computer-based application systems for exchange of messages, video conferencing and sharing of documents were also used by interns during their internship. These tools were particularly useful for interns to contact their colleagues during the period of internship when they had to be working from home for two months due to a nationwide lockdown as a result of the pandemic.

Critically, these emerging technologies at the organisations are embedded in business operations such as communication with customers, streamlining business processes and analysis and use of data and digital media for marketing campaigns (Wang, 2011). Hence, it is not surprising to observe the work of interns as intricately interwoven with these technologies for access to information and knowledge alongside seeking to communicate and collaborate with people inside and outside the business of their organisation. Salient within the learning experiences of interns was the multiple roles of digital technology in organising learning opportunities for

Table 11.1 Interns' deployment of technological tools at the workplace

Types of digital technologies at the workplace	Examples
Digital applications that perform specific functions in facilitating the execution of interns' work tasks	• Image and video editing software • Media monitoring tools • Content management systems
Social network platforms for information, content sharing	• Tik Tok • Instagram • YouTube
Web-based communication applications for facilitating information exchange and interaction between relevant actors within the internship context	• Email platforms • Messaging applications • Video conferencing applications

interns at the workplace. This next section will add novel insights through an explication of how boundary objects in the form of digital technologies described above structured the learning of interns through a dynamic dialogical interaction between humans and technology.

Digital Applications Structuring Work Processes of Interns: Content Management Systems

Interns mentioned about content management systems as integral for their work. Specifically, these knowledge management systems were used by interns to prepare reports, update client details and for submission of documents. They characterised it as complicated initially but gained proficiency over time as they learn how and where to get help to use the tools and systems. However, unknown to the interns, when the content management system was the boundary object, it also became the problem space for negotiating a structure of work process for internship learning.

Specifically, for Gaia, placed in the communications team in a deep technology firm, her first internship job task was to organise a client database that was constantly being updated with new client details. This management system was also used by the marketing team for collating, sending updates and analysing responses of clients. Gaia was tasked to update the system to reflect increasing number of participants who have signed up for their company events and she had to use the system to generate electronic direct mails for mass dissemination of company events. While we may think Gaia at a young age of 22 is a typical digital native having the skills for digital fluency (Kivunja, 2014), working on the content management system was particularly challenging for her:

> client databases, so every time a participant joins the event, we have to update in database system that the company has. These processes rely very heavily on IT and things like that. And I am very bad at computer skills. So I wasn't really able to cope, because there were a lot of things to be learnt and I feel so… I also had to be in charge of Electronic Direct Mailers (EDMs), have you heard of EDMs before? It's like a… it's electronic… direct marketing like… a software. So it's like we send out weekly newsletters via electronic means to those potential… members or people who attend our events.

Gaia revealed that she had to be working on the content management system almost every day as 'it was very new' for her. Within the 'steep learning curve', she mentioned that her workplace supervisor had assigned another colleague, Zoe, to guide her. This was helpful as Gaia was able to seek help from Zoe and established a work routine in the following manner:

> So my mentor (Zoe) will actually update about what is the upcoming event. Then I draft out the content based on what she tells me. Yeah, she is my mentor, because she will send out the information but before that I will send it to my supervisor for him to vet through first but not before she tells me to edit this and edit that.

The boundary object identified the problem space for both Zoe and Gaia, which was how the weekly electronic mails could be sent out in a timely manner through the content management system. While the colleague-mentor Zoe taught Gaia how to use the various functions in the management system, it simultaneously structured the work for Gaia to consist of processes involving drafting the mail content, editing it based upon feedback, sending it to supervisor for vetting before forwarding the final copy to colleague-mentor for mass dissemination to clients. Critically, in the iterative process of preparing the weekly electronic direct mails, Gaia was immersed in workplace learning activities that required a dual process of participation and production of concrete artefacts for the business organisation. Within the organisation structure set up by the workplace supervisor for Gaia and Zoe, Gaia was also making sense of the working environment, assessing the level of tech-savviness that she would require for her work and gaining new knowledge about the tech industry that her organisation was situated within. The content management system was in effect facilitating Gaia's learning as she gained increasing familiarity with the management system, identifying how the weekly direct emails sent out were related to the firms' agenda for connecting with the audience as well as the practice of doing so. The coordination with her mentor Zoe and her workplace supervisor developed the internship work routine. This was a powerful boundary object as it also afforded Gaia to work at the boundaries of her supervisor as well as Zoe, as she learnt how to navigate within the content management system. Clearly, the content management system as a boundary object allowed different actors to work together (Star, 2010), interfacing the multiple social worlds of the intern, workplace colleagues, clients and facilitating the flow of resources in the forms of information, management skills and technical skills.

For undergraduates interns in journalism, content management systems for filing stories, uploading photographs as well as receiving feedback from editors for improving their writing were critical aspects of their internship learning. As boundary objects, the digital filing system served as a means through which interns could make visible their work output for other colleagues and to receive performance feedback.

> So, we mainly have this filing system, where we file our stories. And there's like this coding thing… It's like a coding, like chain. So for example the story is about this particular company, we have to include the company code… Because the system is quite complex, so like, there are different parts of it that we have to use for different stories. And they have like, templates. So, I have to know where to find the templates, or which templates to use for which story.

In the excerpt above, Samantha who was interning as a financial journalist described the coding process required to file her written work along the system pipeline for editorial vetting and ultimately gaining publication on the company's website. This complicated process embedded within the company's structured content management system served not only as a template for the intern to submit the stories but also to know 'what might be the next story' as the system offers updates on financial trending topics. Complicating this linear process of intern work was the participation of senior journalists also using the system to monitor Samantha's stories. As described by Samantha:

> I had my stories spiked before. Like sort of delete the story because it does not have a forecast. A lot of the snippets that we do should be market moving. Yeah, they just told me that I am going to spike your story because it doesn't have a forecast… the company (in the story) is only ranked in the middle in all the markets so that (story) is not really saying anything. So at first I was struggling. So that was the story that got spiked.

As an interface, the content management system was facilitating the learning of Samantha through a structured workflow as built within the management system, making her realise what type of stories were valued by the company. For the senior colleagues, it was a means through which they gave feedback about quality of writing to the intern, albeit unceremoniously. As a result, Samantha would subsequently scrutinise information from the content management system to gather information for her future publications:

> Like now, I look at the company if its super good or like super bad, then if I can figure out more, I work that in. so like, umbers, don't really seem so important to me, but in this line of job, it very important, every decimal place.

The manner of 'figure out more' required Samantha to access different sets of information from the content management system and it was vital for her to put together information quickly for publication. Hence, it was not surprising when Samantha also mentioned about checking the system every morning for the latest updates whether it was about the regional stock markets, external analysts' views, company reports and discussing possible write-ups with her supervisor. The management system as a boundary object was simultaneously the resource and facilitated the reporting structure for Samantha's work. For her senior colleagues, the same boundary object was used to track the performance of the intern as mentioned by Samantha at the end of her internship:

> So, one of the copyeditors, he is the scary one in the office, he really picks out everyone's mistakes and he messaged me towards the end of my internship telling me that he saw an improvement in my work.

Just as knowledge management systems codify and catalogue expertise, ideas and protocols of organisations (Alavi & Leidner, 2001), the system was also organising the everyday work structure of the interns as they learnt how to access and process information inside the system. Within this seemingly convenient way of learning about the organisation, interns had to overcome technical challenges of navigating the system, informally networking with their supervisors and colleagues to ensure they were coordinating the weekly or even daily dissemination of information through the system correctly. Hence, as a boundary object, it is saliently explicated in the examples above how it can serve as powerful means for structuring work processes of the interns.

Situating Internship Workplace Practices Within Organisation's Business Functions:

By examining social media as boundary objects, this segment unveils the processes in which social media technology is configured and reconfigured as various individuals including the intern participate in its construction and usage application at the workplace. For example, Nelly was tasked to create visual content to market an annual event organised by her firm through Instagram. This was a digital tool that captured multiple meanings for different social actors at the workplace, for Nelly, it was 'one big project' that she had to undertake as an intern. For the firm, it was a platform that was necessary for marketing to and connecting with participants of the annual event comprising multiple streams of fringe events. The Instagram postings were also linked to the company's live website offering on-time updates on events. Driven by her recognition of this 'one big project' and the need to be a contributing member of the team, Nelly embraced social media which in this instance, Instagram, for situating her internship learning experiences within the business functions of the organisation. Explaining how she recognised and enacted learning:

> Because like, I'm the only one exploring it right now, and Instagram is a new thing that we are doing this year because of how like it has garnered traction over the past few months. So I know that I have to come up with more ideas, a full, maybe a proposal of sorts on how do we launch it on Facebook, even though it's an Instagram filter. How do we put it up on our website? How do we get people who go to our website to come to Instagram to use that filter, and share with their friends?

By questioning how a particular platform feature was to be incorporated into the firm's website, Nelly crafted a set of work objectives to guide her own learning within the team. When asked how else she was using social media, it was observed that the use does not stop at creating technical learning opportunities for oneself at the workplace. Working with and on social platform was also the means through which Nelly broadened her understanding of social media as a marketing tool. This was explicated when she reflected on her experiences as a consumer of the information to the creator of content to understand the dynamics of working in a team:

> I think, like because I'm mainly dealing with social media, I don't think it is something very new to us, like, millennials, because we are on it almost every day. We know what is trending, what can garner traction. Then in terms of marketing, it's like learning from them (colleagues), like what they do and just like, trying to be a bit street smart and, tweak it a bit… you work in a group, even if you do manage a certain style of the website alone, after that it still goes to a group, the programmers, the stylists, the artists, you can never complete an entire festival by yourself.

For interns who are familiar with social media platforms, the boundary object of digital social media was a conduit to situating oneself within workplace practices valued by the business organisation. This was explicitly revealed by the next intern, Josh, who described how social media as a boundary object also offered a means for him to build a digital community for the advertising firm. In the case of Josh who

felt he was 'very experienced in' using Tik Tok compared to the more experienced professionals in the firm,

> was so flexible, I basically, when I look at it, I know it's my project because I dictated every, the fonts, the colour scheme, the design, everything was done by me. So I really enjoy the process where I have the freedom to do something, and I think as a content manager and all that, coming up with ideas is one of my strong points, so I definitely see it being relevant to what I want to do in the future

From the above, interns recognised the usefulness of social media in affording them learning opportunities at the workplace and enacted to 'own' the media as the means for structuring contributions as vital for their organisation. As boundary objects, these social media platforms enabled interns to cross from the world of school to the world of work, configuring learning experiences for interns at the workplace as much as itself was reconfigured by the temporal emergence online content created by the interns.

Tik Tok

Social media platform in the instance of Tik Tok was a boundary object functioning as a tool over time for interns to establish their work practices. Specifically for a pair of interns, Kelly and Clarissa, assigned to the digital marketing team for a non-profit organisation, they mentioned that Tik Tok was often used to network with their peers and acquire information related to their personal interests. However, at the workplace, when interns were tasked to create Tik Tok video postings to announce campaign events related to organisation's theme on sustainability, this social media platform became the interface between the interns and the target audience of the organisation's campaign events. As a result, this boundary object also vested power on the interns who harnessed it to negotiate with full-time colleagues for time and autonomy to create and post the videos. Translating their personal context as social media users to becoming content creators for their organisation's social media accounts was an example in which boundary objects as such became legitimate tools for workplace learning. The creation and management of the company's social media account was a key process in developing and maintaining coherence of learning for the interns as their world intersected with their colleagues in the workplace context. Hence, it was not surprising when Kelly reported that she was most proud of her contributions when 'all the Tik Tok' videos were posted up according to campaign schedule and received much 'attention'.

While boundary objects afforded learning opportunities, it simultaneously created knowledge boundaries. Unknown to the interns initially, all web-traffic information related to the organisation's social media accounts were monitored by another digital team senior colleague to analyse how well the company's social media accounts were gaining traction amongst internet users. When the senior colleague revealed his job functions to the interns, both interns volunteered to learn from him more complex Google data analytical tools to enhance how research capabilities can support the

communication efforts of the firm. However, this knowledge boundary became more permeable over time as interns gained increasing analytical skills under the guidance of the senior colleague. This further reinforces boundary objects as articulating multiple diverse strategic meanings for the interns and their colleagues, yet at the same time shaping the workplace world that allows interns and their colleagues to operate together.

Integrating Interns to Become a Member of the Organisation

Web-Based Communication Systems

Boundary objects are flexible artefacts inhabiting multiple intersecting social worlds. In the case of Gaia, the internal mailing system of the firm was a boundary object between the intern and the rest of the colleagues in her department as each of these communities had working knowledge of the system. However, Gaia was not proficient with the emailing system and had to seek help to understand how to use the functions within the emailing system to organise the work calendar for her other colleagues. Help came again from senior colleague Zoe who sat behind Gaia in the office. She was instrumental in guiding Gaia on the functions of the system and when Gaia was constantly forgetting the steps for navigating within the Outlook email functions, Zoe specifically requested for Gaia to prepare 'a notebook to take down step by step' her instructions on how to navigate the electronic mail system independently.

As Gaia 'became better with it' in her own words, she was also tasked with a basic task of updating Outlook calendar of her supervisor and team members. Taken for granted calendar task functions within organisation's email network were unfamiliar for Gaia. In the words of her colleague-mentor, Zoe, during a separate interview, she was surprised that Gaia 'didn't even know how to use Outlook'. Within the technology, was the intersection of social worlds of the more experienced colleagues and the fresh intern, Gaia who was trying to integrate herself into the community of practice at the workplace. With increasing knowledge about the functions of the emailing system, Gaia was subsequently able to manage the calendars of her colleagues in the team. This was useful for her as she was able to gain a view of their time availability to arrange for consultations and discussion opportunities with her colleagues. In parallel, the team's time schedule as managed by Gaia was workplace knowledge for the team that there was a junior colleague overseeing their team meeting schedules. Hence, as a boundary object, the email system was a useful boundary object for Gaia to bring together participants who used the system in their own ways for team meetings and collaborative tasks as well as observe the work of her colleagues as scheduled within the software application.

Boundary object was an important tool for interns to building relationship with co-workers at the workplace, albeit in challenging circumstances. By becoming a member of the workplace community of practice, interns were able to function in

their job roles despite having to work from home during the second half of their internship due to the pandemic. As articulated by another intern, Charles:

> I am doing the exact same work that I would be in the office. I am still in charge of the community management of different social media networks. I still have to generate monthly reports. But am more autonomous now. I think they (co-workers) have more confidence in me and they don't have to hold my hand anymore. They just state what they want and they just expect me to do it.

For Gaia, she gained a close knitted membership within her workplace community of practice during the pandemic as the nature of work within her department pivoted online:

> Now because we are switching everything to online events. So, everything now has been in transition online, and now our event signup is very packed every day. So we have like, sometimes we have like two events in one day. And then we have to stay throughout, like the entire duration of the event, and one hour prior to the event, we have to prepare, like, to make sure all the (zoom) links are working, and to connect with the speakers. Because sometimes there are a lot of speakers, and then we have to connect with them, then teach them how to use the Zoom, like the functions and everything.

This was an interesting contrast to Gaia's reflection on her lack of knowledge regarding Zoom before the pandemic:

> I have never ever heard of Zoom before, prior to this (pandemic). Yeah, then after that, now because of this situation, I learnt how to set up Zoom meetings.

Gaia had much trouble knowing how to use ZOOM to conduct a webinar for the company during the pandemic. She had to seek help from a senior colleague who subsequently went online together with her to demonstrate the functions of ZOOM. The boundary object in focus in this instance was the video conferencing communication tool that was also used as the platform for hosting the event. Unknown to the intern, seeking help and finally learning how to use the tool was perceived by the supervisor as a proactive way of relationship building. This was also reflected when Gaia commented that this senior colleague was her 'mentor' and was always ready to offer guidance to know how to use the technologies nested within the assigned job function:

> She (mentor) will teach me how to share screen, and then like, how to collate all the videos, and how to do the looping. The looping, make sure that, how to switch off all the notification so that it doesn't ping when, the event is ongoing. So she will help me with all these (zoom-related) issues that I'm facing. And then she made sure that the next time when I run, as in, I help out at the event (zoom webinar), then everything will run like smoothly.

Discussion

The findings above highlight how boundary objects in the form of workplace digital technologies structured the work processes of interns, situated internship practices of

interns within business functions of the organisation and integrated interns into the workplace community of practice. Critically, instantiations of digital technologies are material to learning opportunities (Hawkins et al., 2017) and technologies were tied with intern actions for achieving work goals. For interns whose job functions relied heavily on content management systems, it can be a challenging task when faced with less than intuitive feature functions within the technological system. This is evident from Gaia and Samantha who had to learn how to use the basic functions of the technological system before they could be given more complex work tasks. Importantly, the process of entangling relations between intern and technologies (Orlikowski & Scott, 2008) was the first step for interns to begin the process of enactment of everyday work practices.

Within the context of social media platforms, interns can be observed to utilise these boundary objects for workplace learning opportunities. In doing so, they attempt to understand what may count as work valued for business functions of their workplace organisations. Interestingly, these interns are proficient active users of different social media platforms outside of work context. When using these platforms as boundary objects to cross the boundary from school to work, interns consequently become boundary crossers structuring their learning over time alongside colleagues to establish work routines (Wenger, 2000). In this way, interns contributed to business functions of the organisation by co-developing knowledge through content creation together with senior colleagues.

Social media platforms typically used in organisation for internal communications and knowledge sharing was also a key mechanism for interns to signal their work output as members of the workplace organisation. This points to the function of boundary objects as a means for interns to gain deepening membership within the occupational community. This is especially so when interns used social media for presenting themselves as part a contributing member of the organisation as articulated by Nelly, Josh & Kelly above on their significant contributions for their workplace organisation. Critically, the empirical findings on how social media platforms provided internship workplace learning opportunities described above contribute to current research on the affordances of social media in organisational processes (Treem & Leonardi, 2013).

Through the functionalities and interfaces of digital technologies as described in the previous section, workplaces can thus be viewed as communities of practices where artefacts are acted upon and simultaneously shaping the sociocultural workplace practices of individuals (Wenger, 1998). The dynamic nature of technology, specifically communication technologies used by the interns captures how the interns within the context of their work understood and accepted the local usefulness of particular technological artefacts and subsequently enacted it for working from home during the pandemic, thus maintaining active membership within the workplace community.

Taken together, the findings concerning digital technologies at the workplaces as boundary objects provide a unique empirical perspective on enactment of internship learning at the digital workplace. The sociocultural view advanced here assumes that workplace engagements consist of technology and human actors that interactively

facilitate and motivate individuals in their actions. When tangled together, routines and shared patterns of actions over time coalesce into distinct patterns of workplace practices.

Two implications result from the above findings. First, internship learning stems from the combined effects of digital technology framing work and human action. With the computer software or social media platform affording a structure for how work can be performed, interns therefore direct their action towards the digital technology. Often, this contributes to a routinised structure of work for the intern but not entirely in predictable ways as interns gain increasing knowledge of their work to be assigned more complex task. Importantly, technology forms the necessary foundation for enacting workplace learning for interns which was keenly felt by the undergraduate interns who continued their work tasks at home, when work was moved to an online environment due to the pandemic. From participating in meetings on ZOOM, navigating content management systems remotely and working with colleagues remotely, the digital technologies mediated the practical internship learning experiences of the interns. This was particularly useful for undergraduate internship learning to proceed largely as they would with an on-site internship despite the challenges posed by the pandemic on business organisations (Wheeler & Waite, 2021).

Second, this chapter argues that digital technology generates new possibilities for action, giving rise to novel types of activities and practices for internship learning. As illustrated by the interviewees, technologies such as video conferencing tools generated new workplace practices, while social media platforms created new workplace learning opportunities when interns were given permission to use these platforms for achieving organisational objectives. Digital technology at the workplace hence is generative (Scott & Orlikowski, 2014) as evidenced in new ways of conducting seminars and online marketing activities by the interns when they continued their internship from home during the final two months of their internship placement.

Conclusion

The value and importance of digital tools during internship learning have never been clearer. Understanding how interns learn on the job through their interaction with digital technologies has implications for the education and training of undergraduates. This chapter has offered the concept of boundary object as a way of understanding internship learning as integrated within dynamic relations among people and technologies at the workplace. For educators concerned about how to develop undergraduate internship learning, we must consider how common digital tools work in and through undergraduates' daily engagement with technologies, whether work is performed at the physical workplace or remotely from home. This will require our gaze to shift from interns using digital tools for performing work tasks to internship learning as contingent upon digital tools. While the pandemic has brought about a shift to remote working and learning, in adopting a boundary object approach to

examine the myriad of possibilities for the enactment of undergraduate internship learning, digital technologies may hold the key to supporting student learning and transition to the workplace, whether physically or remotely.

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Part IV
Closing

Chapter 12
Future Directions for Research in Graduate Employability and Workplace-Based Learning Development

Betsy Ng

Abstract This book offers insights and practical implications for graduate employability in future workplaces and workplace-based learning such as internship through various sociocultural perspectives. It puts forth essential ideas and approaches on the development of employability skills and workplace-based learning outcomes. The closing chapter provides an integrated perspective of how existing research could advance the issues of graduate employability and workplace-based learning development, as well as continuing education and future workplace agendas from sociocultural perspectives. This chapter discusses future directions for higher education research in graduate employability and workplace-based learning development, as well as an agenda for employability research. It highlights some suggestions on how the research in this field might be extended and gaps in the knowledge might be filled by future research. It also highlights employability skills and future workplace research in the current coronavirus pandemic era, as well as synthesises the empirical and review studies reported in this book. It discusses about the significance of each chapters, bringing all together with a strong focus on sociocultural research in graduate employability and workplace-based learning development. Finally, the editor concluded the theoretical contribution of the chapters on this important research in graduate employability and workplace-based learning development.

Future Directions for Research in Graduate Employability

This section consists of five chapters that discusses the importance of research in graduate employability and workplace-based learning development. The chapters in this book provide varied sociocultural perspectives and new knowledge to the field of graduate employability research as well as workplace-based learning development and its outcomes. They contribute to the literature of existing research and provide implications for higher education policy. This book also addresses the outcomes

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related to employability and workplace-based learning. The sociocultural theory applied in the review and empirical chapters contribute to higher education policy and workplace community. This concluding chapter synthesises the key discussion points, theoretical contributions and future directions for research. It also addresses the implications for research and practice.

The main contribution of Chap. 2 by Billett is the development of graduate employability through work integrated education and work integrated learning. Using a sociocultural perspective to discuss about aligning work integrated education with employability goals and processes, various curriculum considerations and pedagogic practices are needed to achieve the outcomes. In this chapter, Billett drew upon his recent research work involving over twenty universities. They were from a range of disciplines that constantly confront change in the requirements for work and the capacities of workers in those fields. It is important to account for the experiences afforded individuals, how they came to engage with them and the relations between what were afforded and how individuals engaged through a sociocultural lens. This chapter has theoretical contribution that advances responses to assist students achieve their employability goals.

As graduate employability is a key goal for contemporary higher education, Ng extended Chap. 2 by linking to the social and cultural aspects of the workplace. Chapter 3 provides insights of a sociocultural perspective on the graduate employability and workplace context. This chapter makes a theoretical contribution in sociocultural aspects of a workplace and novel insights into graduate employability by integrating individual, interactional and sociocultural practices. Ng highlighted that sociocultural perspective provides insights into understanding individual's social and reflexive process, and the expectations of a workplace community. Finally, she suggested that this sociocultural approach may develop graduates' ability to survive and achieve in the workplace, thereby adapting to the culture and values of the workplace community.

Leow and Billett conducted an empirical study that revealed the importance of social and cultural settings to facilitate adult learners' experiences in which they engage and learn from one another. This chapter extends graduate employability by pursuing a Singaporean tertiary education institution's continuing education and training (CET) programme. The authors proposed that the CET model should address the goals to develop the graduate employability, as well as to sustain and support working age adults' sense of self during periods of transition. Using a sociocultural perspective, their findings contribute to policy and practice in promoting graduate employability. A practical implication for this study is to provide support for the CET instructors to create rich and authentic experiences for the learners, promoting their engagement and motivation. Future research can investigate the pursuit of an effective CET model and learners' experience in promoting lifelong learning and enhancing continued employability.

Pham in Chap. 5 suggested that culturally diverse work environments and living and work experiences had profound impacts on the international graduates' communication competencies in both their short- and long-term employment journeys. Her study's findings revealed a range of sociocultural factors that influenced how

the international graduates developed and utilised their communication skills. She recommended that universities and industries should collaborate to enhance international graduates' employability, so that students can learn communication skills in the labour market rather than at their universities. Future research can consider how international students may use agentic dispositions and actions to strategies resources both carried from their home country and articulated from the host country, as well as to overcome challenges in the host country.

Using a sociocultural lens, Tang's study in Chap. 6 provides meaningful implications for current and future international graduates in understanding the challenges associated with six employability capitals at their level. This empirical study resonates to Chap. 5 and expands the evidence of international graduates' employability. The author emphasised the importance of six employability capitals and how universities should prepare the six employability capitals for graduates' long-term employability and positive outcomes. International graduates should plan and develop strategies to navigate the host labour market. Future research can explore how international graduates exercise employability agency to develop and utilise these employability capitals.

Future Directions for Research in Workplace-Based Learning Development

This section begins with Chap. 7 highlighting the importance of partnership to develop skills and knowledge for students. Seow, Ho and Hung found that participating in partnerships can move members towards the development of knowledge, practices and experience through a sociocultural lens. Through partnership, certain values, norms and knowledge were developed and shared, resulting in changes of practices. The authors suggested that partnerships can be the driver for the development of new competencies and practices, thereby enhancing workplace employability. Future research can consider expanding partnerships to other organisations on shared goals, thus offering opportunities to enhance employability.

Chua's study in Chap. 8 contributed to the viability of a technology-enhanced PBL environment (ePBL) based on part of Vygotsky's sociocultural theory (i.e. zone of proximal development). Although traditional PBL environment (tPBL) has been the norm in education, technology has been used to minimise disruptions in daily activities such as schooling and working. Using Vygotsky's zone of proximal development as a sociocultural lens may develop critical thinkers and self-directed learners, allowing them to navigate the twenty-first century education landscape and future workplace effectively. This chapter extends the sociocultural research by highlighting the need of collaborative learning and learning in the twenty-first century goes beyond content knowledge acquisition.

Next, Chiam presented a review chapter on an inclusive collaboration culture within an organisation that is necessary to build a resilient workforce. Chapter 9

highlights a diverse workforce that practises inclusive collaboration culture is important, as it increases participation in lifelong learning and engages other perspectives. Through a sociocultural perspective, organisations should embrace diversity by hiring people of different nationalities, races, and gender, thereby creating an inclusive environment. Shien emphasised that this working environment will promote lifelong learning and build resilience in the workplace. Future study may investigate this area of research and explore the factors related to an inclusive environment through a sociocultural lens.

Another example of a workplace-based learning is job crafting practices of restaurant cooks in Chap. 10. In this chapter, Yang presented two case studies on the job crafting practices in Singapore, and how job crafting necessitates and promotes learning. Based on a sociocultural approach, job crafting and learning involved workers learning and engaging in an ongoing development through their daily work activities and interactions. Her findings suggest that more attention is required at an organisation to provide opportunities and support for job crafting and learning within the workplace. Future research can investigate job crafting and learning in other workplaces and organisational contexts.

Finally, Chap. 11 demonstrates a phenomenological approach on how digital technologies as boundary objects (i) structure work processes of interns (ii) situate internship workplace practices within organisation's business functions (iii) integrate interns into a community of practice. Shien's study revealed that digital technologies explicated as boundary objects helped undergraduate interns to perform their duties at work. Her findings explicated that video conferencing tools generated new workplace practices, while social media platforms created new workplace learning opportunities. This chapter contributes to workplace-based learning research and offers practical strategies for enhancing internship learning at the workplace for the post-pandemic era. It resonates with Chap. 8 and expands the use of technology in a workplace-based learning such as internship.

Conclusion

This book highlights the perspectives of sociocultural perspectives on graduate employability and workplace-based learning development. It addresses the importance of higher education research on employability skills and provides insights into the social and cultural aspects of a workplace. It also includes issues such as development of emerging and employability skills, as well as directions for the changing nature in real-world settings. This chapter concludes the future directions for higher education research in graduate employability and workplace-based learning development, as well as new research agenda for development of employability skills and practical strategies for individuals. In summary, every chapter in this book has its strengths that is advocating the importance of a sociocultural lens to understand the social and reflexive process of individuals and collaboration culture of a workplace community.

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