Advances in Business Education and Training 5

Piet Van den Bossche
Wim H. Gijselaers
Richard G. Milter *Editors*

Facilitating Learning in the 21st Century: Leading through Technology, Diversity and Authenticity

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Advances in Business Education and Training

Volume 5

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Advances in Business Education & Training is a Book Series to foster advancement in in the field of Business Education and Training. It serves as an international forum for scholarly and state-of-the-art research and development into all aspects of Business Education and Training. It will not only publish empirical studies but also stimulate theoretical discussions and address practical implications. Also reviews of important developments in the field are encouraged. The editors welcome contributions in which a line of reasoning is illustrated with experiments, design-based studies, best practices, and theory development. In addition, the editors encourage submission of new ideas for business education and training, papers that are not necessarily empirical in nature, but describe interesting new educational tools, approaches or solutions.
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ISBN 978-94-007-6136-0 ISBN 978-94-007-6137-7 (eBook)
DOI 10.1007/978-94-007-6137-7
Springer Dordrecht Heidelberg New York London

Library of Congress Control Number: 2013930550

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Preface

Business education is constantly looking for powerful practices to develop the future leaders, and business enterprises want to help graduates to become true experts. The book series *Advances in Business Education and Training* wants to contribute to this search and foster advancement in the field of business education and training. It is an international forum for scholarly and state-of-the-art research and development into all aspects of business education and training. In this way, the book series is one of the platforms of the EDiNEB network (www.edineb.org) which brings together professionals in educational institutions and corporate learning centres, who strive for innovation in developing learning environments.

I am proud to present the present book *Understanding and Facilitating Learning*, the fifth in this series. We want to thank all the contributors for presenting a wide range of interesting ideas. We believe strongly that they offer valuable input to further our capabilities in tackling the challenges ahead. I also want to thank the people that are not so visible but are indispensable for the success of this series: our reviewers. Below, you find the names of the people that worked hard to deliver high-quality feedback to our authors. As you all know, this lays the foundation for expert performance. Thank you!

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Understanding and Facilitating Learning: An Overview

Piet Van den Bossche, Wim H. Gijselaers, and Richard G. Milter

There is deep interest in learning. Learning is recognised as the only sustainable answer to an ever- and fast-changing environment. Global drivers are pushing to develop high levels of knowledge and skills with attention increasing to more demanding forms of 'twenty-first-century competences' (Dumont et al. 2010). This drives a genuine concern into the nature of learning, in order to be able to create the environments that can foster it.

However, this learning shows to multifaceted, multidimensional and multilevelled and thus not easy to grasp. This implies that environments that aim to let learning flourish need to take into account these differences and build upon these. This book tackles this challenge and takes its implications into account for different levels of (organising) learning. This is reflected in the three different parts of this volume. The first part covers studies on (differences in) individual learning and ways to support them. The second part brings together studies that take the analysis of learning to the level of the group (team learning, project-based learning, knowledge sharing in problem-based learning etc). This analysis is inevitable as knowledge is increasingly collaborative in our organisations and educational institutions understand the power of these group learning efforts. The last part brings two studies that are quite different but fundamentally related. It takes the question of learning to the organisational level. The thoughts presented in Part I and Part II have serious implications for the educational institutions that want to organise these learning environments. How do they take up this call for understanding and facilitating learning?

Chapter Overview

Part I Individual Learning

The first part of this book opens with a chapter by Tempelaar, Rienties, Giesbers and Schim van der Loeff on cultural differences in learning dispositions. The authors

study a broad range of individual differences that are of importance for learning, including learning process and learning conceptions, but also goals and motivations. Their analysis focuses at revealing differences in profiles of learning between students from different cultural backgrounds.

The next chapter, 'Learning Styles and VSC Modules: A Statistical Analysis of Perceived and Actual Effectiveness' by Don Cyr, reaches out to the learning environment and questions how characteristics of the learner interact with specificities of this learning environment. The study is conducted in the context of the implementation of VSC modules for teaching financial mathematics concepts in an introductory MBA finance course.

The last chapter of this first part takes the learner out of the business school and into the workplace. Beausaert, Segers, van den Berge, Hommes and Gijselaers look into the continuing professional development of employees. More and more, organisations rely on tools such as professional development plans to facilitate and guide the learning of their employees. The authors study the role of the supervisor, which is recognised as an important supporting condition, in stimulating and guiding the employee's use of a personal development plan. This chapter reports on an intervention study that aimed to develop the competences of the supervisor in guiding through the personal development plan.

Part II Group Learning

Magnier-Watanabe, Benton, Herrig and Aba explore in their chapter 'Bringing Virtual Teams and Cross-Cultural Business Education into the Classroom' how group work can be used for students to learn how to cope with an increasing multicultural environment and reap the benefits of this diversity. They have tackled this challenge by letting students work in mixed and geographically distributed virtual teams on various exercises and case studies dealing with issues specific to cross-cultural management. They identify what students take from this experience and provide concrete recommendations on the development of such a course and its institutional support, structure, blended learning, tangible diversity and cross-cultural learning.

The chapter by Grohnert, Bohle Carbonell, Dailey-Hebert and Segers looks at the evaluation of a learning environment that comprises an important collaborative part. They present a model that identifies important aspects of this learning environment and relate that to learning and satisfaction. They apply this evaluation model to two online courses provided to professionals.

Juskiw and Glanz identify in their chapter the learning power of applied research projects. They analyse the learning potential of projects that are conducted in collaboration between academy and industry. These projects can provide an authentic learning environment that otherwise cannot be offered in our educational institutions. Based upon the concepts of action research, problem-based learning and

appreciative inquiry, the authors model the experience in such projects and show its added value.

These kinds of authentic projects are also the context of the study presented in the next chapter by Rienties, Willis, Alcott and Medland. This chapter reports through design-based research on the implementation of assessment of learning in project work: how can self-reflection, peer rating and peer assessment help learners to reflect on their role within a group and their individual contribution to the project?

Part III Organisational Learning

Reid explores in her chapter 'Perspectives and Practice: Facilitating the Learning of the Twenty-First-Century Manager' the consequences of introducing new pedagogic processes. The analysis shows how dialogue plays a crucial role in how pedagogical innovation takes place. Hereby, the chapter underscores the importance of tackling the challenge of consistency when implementing innovative pedagogies and dialogues within emergent communities of practice, allowing members to discuss, debate and challenge perceptions and develop more robust teaching practices.

The last chapter of this book by Claudine Schweber questions how higher education can prepare itself for continuity when confronted with disasters. The chapter 'Survival Lessons: Academic Continuity, Business Continuity, and Technology' starts from the observation that business organisations ensure that essential functions continue, higher education institutions pay much less attention to this. The chapter argues on the need for being prepared and explores possibilities to do so.

Reference

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Part I
Individual Learning

Chapter 1
Cultural Differences in Learning Dispositions

Dirk T. Tempelaar, Bart Rienties, Bas Giesbers, and Sybrand Schim van der Loeff

Introduction

In this chapter, using the framework of Hofstede (1980), we will investigate how cultural differences amongst 7,300 students from 81 different nationalities influence their learning-related dispositions in an introductory quantitative methods course. Learning-related dispositions are operationalised with a rich structure of concepts, ranging from implicit theories of intelligence, effort beliefs, academic motivation, achievement goals, and learning styles and approaches to subject attitudes. We will use the term learning-related dispositions, or in short learning dispositions, to refer to a broad range of individual difference characteristics that are of importance in learning. These dispositions are assumed to be context specific; the inclusion of subject attitudes as one of the learning dispositions is an obvious example of the role of context. In that sense, we use learning dispositions in a very similar manner as learning approaches in the model of Meyer (2004; see also Richardson 2011). However, our dispositions cover a wider range of individual differences and include not only learning processes and learning conception but also goals and motivations. We will restrict the use the term learning approach to refer to Meyer's framework and the term learning style to refer to Vermunt's (1998) framework. Our analysis aims at unrevealing different profiles of learning-related dispositions between students from different cultural backgrounds.

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P. Van den Bossche et al. (eds.), *Facilitating Learning in the 21st Century: Leading through Technology, Diversity and Authenticity*, Advances in Business Education and Training 5, DOI 10.1007/978-94-007-6137-7_1,

Cultural Differences and Learning in Higher Education

A strong diversity in languages, very different national educational systems, and cultural heterogeneity make Europe an outstanding case for investigating cultural influences on learning; for example, according to the GLOBE study (House et al. 2004), no less than five of ten different cultural world clusters are located within Europe. Any European university with a truly diverse inflow of students is inevitably confronted with the need to accommodate diversity in prior knowledge, diversity in students' learning approaches and cultural diversity (Eringa and Huei-Ling 2009; Rienties and Tempelaar, in press). This empirical study is based on the experiences of one such typical European university with a strong international profile. It investigates the educational consequences of these diversities, in order to contribute to solutions that facilitate the transition from secondary to tertiary education.

In the characterisation of cultural differences, research by Hofstede (1980, 1991, 2001; Hofstede et al. 2010) takes a prominent position. Based on an analysis of attitude survey questions obtained from employees in more than 50 countries, Hofstede identified six major dimensions on which cultures differ: power distance, uncertainty avoidance, individualism–collectivism, masculinity–femininity, long-term–short-term orientation, and indulgence versus restraint. Power distance refers to the extent to which less powerful members of organisations and institutions accept and expect unequal distribution of power. Uncertainty avoidance refers to society's tolerance for uncertainty and ambiguity, indicating the extent to which members of a culture feel threatened by ambiguous and uncertain situations. Individualism versus collectivism signals the degree to which individuals are integrated into groups: from loose ties between individuals, and everyone expected to look after self and immediate family, to people being integrated into strong, cohesive in-groups. In masculine societies, emotional gender roles are rather distinct, whereas in feminine societies, these roles overlap. The fifth and later added cultural dimension of long-term orientation describes if a society values future rewards more than the fulfilment of present needs and desires. This fifth dimension stems from research of Bond and colleagues (Bond et al. 2004) and is based on the World Values Survey data. The sixth dimension of indulgence versus restraint refers to subjective well-being and is again based on the analysis of World Values Survey data (Minkov 2009). Indulgence stands for a society that allows 'relatively free gratification of basic and natural human drives related to enjoying life and having fun', whereas the opposite pole, restraint, stands for a society that 'suppresses gratification of needs and regulates it by means of strict social norms' (Hofstede et al. 2010).

While the original aim of Hofstede's research was to investigate the impact of cultural differences on leadership styles, the cultural dimensions identified by Hofstede appeared to influence learning and teaching styles as well (see, e.g. Hofstede 1986; Hofstede et al. 2010; Barmeyer 2004; Yamazaki 2005; Joy and Kolb 2009). In particular, the masculinity–femininity difference happens to play a strong role: in strongly masculine countries, like Germany and Japan, education is characterised by competition,

openly striving for excellence, taking the best students as the norm and by regarding failure as a disaster. In contrast, in feminine countries, like the Netherlands and Nordic European countries, the average student is the norm, excellence is something one keeps to oneself, and failure is at most an unlucky incident but better regarded as useful feedback for a next step in learning (Hofstede et al. 2010). Other cultural aspects play less pronounced roles. Long-term orientation is a general virtue that also pays off in educational situations: using international comparative studies into education, Hofstede et al. (2010) concludes that long-term orientation most and for all impacts performance in mathematics education. In collectivist societies, learning is seen as a one-time process for young people who learn primarily how to do things in order to participate in society, with diplomas and certificates being of great importance, in contrast to individualistic societies, where learning is more focused on learning how to learn (Hofstede et al. 2010). Students from strong uncertainty-avoidance countries, like Germany, prefer structured learning situations with precise objectives and detailed assignments and with teachers in the role of experts, as opposed to weak uncertainty-avoidance countries, as again the Netherlands and the Nordic European countries, where the teacher may say 'I do not know', learning situations tend to be open ended, assignments more broad, and objectives more vague (Hofstede et al. 2010). An immediate consequence of this interplay of cultural dimensions and learning-related activities is that the optimal design of educational systems does have important dependencies on cultural backgrounds of that society. For example, student-centred education (such as the problem-based learning method) is an outstanding example of a learning and teaching paradigm that suits students who are familiar with low power distance and weak uncertainty avoidance. In other words, student-centred learning may be more appropriate for societies that are characterised by such a constellation of cultural dimensions, such as the Netherlands, Nordic European, and Anglo-Saxon countries. In contrast, teacher-centred education best matches high power distance and strong uncertainty-avoidance situations, as is prevalent in Eastern European and Latin countries, for example. Motivating students by applying individual competition in classes seems most effective in masculine, individualistic societies, as to be found in the USA and German-speaking countries, and less in more feminine and egalitarian-oriented countries, like again the Netherlands and Nordic European countries (Hofstede et al. 2010). These examples underline that cultural diversity does not need large geographical distances, given the rather different characterisations of, for example, the Dutch and German society.

Hofstede's notion of national cultures met criticism, focusing on limited predictive value, as well as shortcomings in the research methodology applied to arrive at the framework of cultural dimensions (see McSweeney (2002) for a review of the methodological criticism and Hofstede (2002) for a reply). In his Solomonian judgement, Williamson (2002) acknowledges that where the assumption of invariability within nations of cultural dimensions is too strong to hold, there is not much of an alternative. One alternative for the Hofstede framework is offered by a series of studies of the GLOBE (Global Leadership and Organizational Effectiveness) research programme (House et al. 2004; see also Northouse 2007). The GLOBE project identified nine cultural dimensions by investigating the relation between

culture and leadership styles and created ten clusters of world cultures transcending national boundaries. With regard to dimensions of national cultures, the GLOBE project maintained the dimensions power distance and uncertainty avoidance from the Hofstede's framework; it splits collectivism into institutional collectivism and in-group collectivism and masculinity–femininity into assertiveness and gender egalitarianism. Long-term orientation became future orientation, and two more dimensions were added inspired by the masculinity–femininity distinction: performance orientation and human orientation (Hofstede et al. 2010). These nine dimensions were extracted from survey responses of managers from over 950 organisations, with two different versions of the survey being used: one asking to describe the culture (the 'as it is' version) and the other asking to judge it (the 'as it should be' version). The GLOBE research programme meets some of the criticism focusing on predictive value of national cultures, but not any of the methodological criticism. The GLOBE measures found their way into educational research on the role of cultures (see, e.g. Joy and Kolb 2009). In our empirical study, we will apply the Hofstede's cultural indices since the additional detail provided by the GLOBE measures appeared to be marginal, whereas coverage of nations is lost due to less countries being investigated in the GLOBE project. But, next to using the Hofstede's cultural indices, we will make use of the GLOBE culture clustering into the ten cultural regions of Germanic Europe, Nordic Europe, Eastern Europe, Latin Europe, Anglo, Middle East, Southern Asia, Confucian Asia, Latin America, and sub-Saharan Africa as a second perspective in our study of cultural aspects of learning.

In the investigation of cultural aspects of learning, the Western or Socratic culture and the Chinese or Confucian culture are often seen as opposite poles of learning behaviours and therefore overrepresented in cultural studies (see, e.g. Tweed and Lehman 2002). Cultural differences in learning behaviours expose themselves not in the first place, or even not at all, as differences in levels of specific learning behaviours between students of different cultural backgrounds. For example, in their discussion of the often cited 'Chinese learner', Tweed and Lehman (2002) conclude that Chinese learners exhibit both surface and deep approaches to learning and that the approach of memorisation often associated with the Confucian tradition of learning is not visible from data on deep learning approaches of Chinese and Western learners: Chinese students tend to score higher than Western students in many studies. Rather than in levels of learning behaviours, cultural differences manifest themselves in the relationships between different learning behaviours and are thus measured by differences in the intercorrelations of these different learning behaviours. With regard to the example of learning approaches in the Western tradition of learning, deep and surface learning are often regarded as exclusive learning approaches: a student is either a deep or a surface learner. This would induce zero or even negative intercorrelations between measures of both learning approaches. In the Confucian tradition, however, memorisation is part of the deep learning approach, inducing a positive intercorrelation between measures of both approaches. In a similar vein, Tweed and Lehman (2002) postulate that a strong relationship between the role of effort in learning processes and implicit theories of students is typical for Western traditions of learning, in which incremental theorists regard

effort as central in the learning process, but entity theorists do not. In contrast, in the Confucian tradition, one can be an entity theorist and still view effort as a key to learning success. As a result, levels of entity and incremental views and effort beliefs may not be very different between Western and Confucian learners, but the interrelationships between these learning characteristics will be.

The circumstance that specific learning processes may play very different roles for students from different cultural backgrounds and may be found in different learning approaches is an explicit aspect of the student learning approach framework and instrument developed by Meyer and Boulton-Lewis (Meyer 2004; Meyer and Boulton-Lewis 1997, 1999; see also Richardson 2011). According to this model of student learning, students with a transformative conception of learning, that is, the deep learners (Lucas and Meyer 2005; Meyer 2010), as well as students with an accumulative learning conception, who apply the surface approach to learning, make use of similar learning processes like the process of memorising and repetition. But they will do so in different situations, with different purposes. Therefore, the Meyer and Boulton-Lewis model of student learning distinguishes between four different aspects of the process of memorising: memorising with understanding and memorising after understanding being two aspects of memorising regarded as deep-level processes, memorising before understanding as a feature of an accumulative process, and memorising as rehearsal, the repetitive process of committing to memory material that does not make sense, as belonging to a third conception of learning pathology, a conception that truly prevents a student from gaining meaning.

In this descriptive investigation, we will focus both on cultural differences in levels of learning characteristics and on cultural differences in interrelations of several learning characteristics, in order to gain understanding of profiles in students' learning-related dispositions, their relationship with different learning processes and different aspects of a specific process as memorisation, and cultural differences. The investigation takes place in the context of a European university with a highly international profile, attracting students from a lot of different cultural backgrounds, be it that European cultures are better represented than non-European ones. The investigation focuses on learning dispositions in the very first term in the first year, when students are in fact still in their transition from secondary school to higher education. It is in that early stage that cultural differences are best visible and are expected to have their largest impact on learning behaviour.

Measures

This empirical study builds on data measured at two different levels: country data to describe cultural differences between nations and individual difference data to describe individual student profiles. To operationalise cultural differences, we use two related data sets. The first consists of country scores on Hofstede's six cultural dimensions: power distance, individualism versus collectivism, masculinity versus femininity, uncertainty avoidance, long-term versus short-term orientation, and indulgence

versus restraint. Country-specific scores are taken from Hofstede et al. (2010) (see also http://www.geert-hofstede.com/). In addition, clustering of nationalities into clusters with cultural similarities that transcend national boundaries is based on the GLOBE study (House et al. 2004; Northouse 2007) but adapted to the properties of our sample, by splitting the Germanic cluster into the Netherlands, Belgium and Luxemburg, and the German-speaking countries.

Individual difference data are measured with five online questionnaires, namely, Dweck's instruments of implicit theories, effort beliefs and achievement goals, the Inventory of Learning Styles (ILS), the Reflections on Learning Inventory (RoLI), the Academic Motivation Scale (AMS), and the Survey of Attitudes Toward Statistics (SATS).

Implicit theories of intelligence. Measures of both entity and incremental implicit theories of intelligence were adopted from Dweck's Theories of Intelligence Scale – Self Form for Adults (1999). This scale consists of eight items: four *Entity Theory* statements and four *Incremental Theory* statements. Measures of effort beliefs were drawn from two sources: Dweck (1999) and Blackwell (2002). Dweck provides several sample statements which are designed to portray *Effort* as a *Negative* concept, that is, exerting effort conveys the view that one has low ability, and *Effort* as a *Positive* concept – that is, exerting effort is regarded as something which activates and increases one's ability. Of these two sets of statements (see Dweck 1999, p. 40), the first is used as the initial item on both subscales. In addition, Blackwell's full sets of effort beliefs (2002) were used, comprising five positive and five negative items (see also Blackwell et al. 2007). Achievement goals has been operationalised by the Grant and Dweck (2003) instrument, which distinguishes the two mastery goals *Challenge/Mastery* and *Learning*, as well as four types of performance goals – two of appearance nature, *Outcome* and *Ability* goals, and two of normative nature, *Normative Outcome* and *Normative Ability* goals.

The *Inventory of Learning Styles* (ILS) instrument, developed by Vermunt (see Entwistle and Peterson 2004; Vermunt 1998; Vermunt and Vermetten 2004), has been used to assess preferred learning styles. Vermunt distinguishes in his learning styles model four domains or components of learning: cognitive processing strategies, metacognitive regulation strategies, learning conceptions or mental models of learning, and learning orientations. Each component is composed of five different scales, as described in Table 1.1. The two processing strategies *relating and structuring* and *critical processing* together compose the *deep learning* strategy, whereas *memorising and rehearsing*, together with *analysing*, form the *stepwise learning* strategy (also called surface learning in several theories of learning). Similarly, the two regulation scales *self-regulation of learning processes* and *self-regulation of learning content* together compose the strategy *self-regulation of learning*, hypothesised to be prevalently used by deep learning students. The two regulation scales *external regulation of learning processes* and *external regulation of learning results* constitute the *external regulation of learning* strategy, supposed to be characteristic for stepwise learners.

The *Reflections on Learning Inventory* (RoLI; Meyer 2004; Richardson 2011; see Meyer and Boulton-Lewis (1997, 1999) for earlier versions of the instrument)

Table 1.1 Domains and scales of the inventory of learning styles

Processing strategies	Regulation strategies	Learning orientations	Learning conceptions, or mental models of learning
Relating and structuring	Self-regulation of learning processes	Personally interested	Construction of knowledge
Critical processing	Self-regulation of learning content	Certificate directed	Intake of knowledge
Memorising and rehearsing	External regulation of learning processes	Self-test directed	Use of knowledge
Analysing	External regulation of learning results	Vocation directed	Stimulating education
Concrete processing	Lack of regulation	Ambivalent	Co-operation

contains subscales measuring conceptions of learning and epistemological beliefs, as well as learning processes. Several of the learning conceptions are phrased in terms of prior learning experiences. Both conceptions and processes are differentiated into transformative, accumulative, and pathological approaches to learning. The transformative learning approach is described by the learning conceptions of *seeing things differently* (*SDI*) (the focus on discovering new ways of thinking about or interpreting things), *knowledge objects* (*KOB*) (the awareness that what is learned exists as a mental object), and the experience *knowing about learning* (*KAL*) (a metacognitive skill). Learning processes supporting transformative learning approaches are *relating ideas* (*RID*) (the active process of relating new ideas to what one already knows), *memorising after understanding* (*MAU*), and *memorising with understanding* (*MWU*). Accumulative learning conceptions are *learning is fact based* (*FAC*) (the view that learning is about absorbing and reproducing facts) and the experiences *learning experienced as duty* (*DUT*), *repetition aids understanding* (*RAU*) (the idea that through repetition one will grasp the meaning), and *learning by example* (*LBE*). *Memorising before understanding* (*MBU*) and *rereading a text* (*RER*) shape the accumulative learning process. *Detail-related pathology* (*DRP*) (the experience of difficulty in relating and explaining details), *knowledge discrete and factual* (*KDF*) (the belief that knowledge consists of bits and pieces of information), and *fragmentation* (*FRA*) (the experience that what has been learned is no more than a collection of unrelated facts) are pathological learning conceptions. *Memorising as rehearsal* (*MAR*) shapes the pathological learning process.

The *Academic Motivation Scale* (AMS; Vallerand et al. 1992) is based upon Ryan and Deci's (2000) model of intrinsic and extrinsic motivation. The AMS consists of 28 items, to which students respond according to the question item 'Why are you going to university?' There are seven subscales on the AMS, of which three belong to the intrinsic motivation scale and three to the extrinsic motivation scale. In intrinsically motivated learning, the drive to learn is derived from the satisfaction and pleasure of the activity of learning itself; external rewards do not enter consideration. Intrinsic motivation subscales are *intrinsic motivation to know* (learning to experience the satisfaction and pleasure of understanding something new), *intrinsic motivation to accomplish* (learning to experience the satisfaction and pleasure of accomplishing something), and *intrinsic*

motivation to experience stimulation (learning to experience stimulating sensations). Conversely, extrinsically motivated learning refers to learning that0 is a means to some end and therefore not engaged for its own sake. The three extrinsic motivation subscales are identified regulation, introjected regulation, and external regulation. The three constitute a motivational continuum reflecting the degree of a student's self-determined behaviour. The component most closely related to intrinsic motivation is *identified regulation*: the student comes to value learning as important and therefore performs it out of choice, but still does so for extrinsic reasons such as for the realisation of personal goals. Regulation is *introjected* when the formerly external source of motivation has been internalised. *Externally regulated* learning occurs when learning is guided by external means, such as rewards. The final scale, *A-motivation*, constitutes the extreme of the continuum: the absence of regulation, either externally directed or internally.

Attitudes or achievement motivations towards the subject statistics based on Eccles' expectancy–value theory (Eccles 2005; Wigfield and Eccles 2000, 2002; Wigfield et al. 2004) are measured with the instrument Survey of Attitudes Toward Statistics (SATS) developed by Schau and colleagues (1995; also see Dauphinee et al. 1997; Hilton et al. 2004). Expectancy–value models take their name from the two main factors of the motivation to perform well on an achievement task: students' expectancies of success and the task value, that is, the value they attribute to succeeding the task. The SATS instrument measures four aspects of postsecondary students' subject attitudes, two expectancy factors that deal with students' beliefs about their own ability and the perceived task difficulty (*cognitive competence* and *noDifficulty*), and three subjective task-value constructs that encompass students' feelings towards and attitudes about the value of the subject: *affect*, *value*, and *interest*. A sixth scale, *effort*, is hypothesised to represent the outcome of the interplay of expectancy and value constructs in the model. Validation research has shown that the SATS instrument provides a good description of attitudes towards statistics in two very large samples of undergraduate students (Dauphinee et al. 1997; Hilton et al. 2004) and to a range of business subjects (Tempelaar et al. 2007).

Data and Statistical Analysis

The participants in this study were 7,309 first year university students in business and economics. Data has been collected in nine cohorts, ranging from class year 03/04 to class year 11/12. Somewhat more than one-third of the participating students are females (36.4%). Somewhat less than one-third of the students (31.5%) received a Dutch secondary education, the remaining 68.5% being international students.

There are 81 nationalities present in the data set, the largest group consisting of German students: 53.4%, with Dutch students comprising 35.8% of the students. The assignment of students to cultural clusters has been based on nationality data available. Beyond the 88.2% of Dutch and German students, the third nationality

Table 1.2 Culture clusters of students, based on refined Globe clustering

Cluster	No. of students	Countries (samples are ordered by relevancy)
Netherlands	2,621	Netherlands
BelLux	294	Belgium, Luxemburg
EuropeGermanic	3,933	Germany, Austria, Switzerland
EuropeNordic	32	Sweden, Denmark, Norway, Finland
Anglo	58	UK, USA, Ireland, Canada, Australia
EuropeLatin	84	Italy, France, Spain, Portugal
EuropeEast	165	Poland, Greece, Russia, Hungary, Rumania, Bulgaria
Confucian	53	China, Taiwan, Japan, South Korea

is Belgium, representing 3.8% of the students in this sample, followed by a great diversity of all other countries (starting with 0.6% students of Chinese nationality). Access to higher education differs amongst countries. In the Netherlands and several other European countries, a system of open access exists, where all students who succeed in high school are granted access to higher education (be it that business studies and economics are so-called 'numerus fixus' programmes and thus somewhat selective). International students might have undergone stronger selection processes, depending upon their national situation. This is important for the interpretation of cultural differences: the effects of national cultures and different national selection processes are intertwined. For that reason, effects of national cultures do incorporate differences in the organisation of access to higher education.

In the adoption of the Globe Culture Clusters framework, two refinements were made. First, the cluster Germanic was subdivided into the *Netherlands*, Belgium and Luxemburg (*BelLux*), and the German-speaking countries in Europe (*Germanic*), both to do justice to the size of the main three groups, as to account for relative large differences in secondary schooling and in educationally relevant cultural indices amongst these subgroups. With regard to this last argument, although, for example, the Netherlands and Germany are both classified within the European Germanic cluster according to the GLOBE study, the two countries score rather opposite on two cultural indices important for education: masculinity–femininity and uncertainty avoidance (Hofstede at al. 2010). Next, Globe clusters with less than 20 students were removed from the analysis: Africa, Southeast Asia, Middle East, and Latin America (and in the cluster-specific correlational analyses, more clusters were omitted to satisfy this sample size criterion). Table 1.2 contains the resulting culture clustering of students in the sample, based on the nationality of the students.

Nationality is also used to construct the Hofstede's cultural indices: all students of same nationality are assumed to have identical scores on all six cultural indices. This implies that the natural level to investigate the isolated impact of cultural differences is that of national, or culture cluster, data, and not of individual data. For any analysis at the individual level, national scores on the Hofstede's cultural dimensions are used for individual scores of students of the respective countries. This procedure is in line with procedures followed in Hofstede et al. (2010): cultural differences describe national differences, not individual differences. Not all instruments

are administered in all nine-year classes. For that reason, descriptive statistics provided in the next section contain the sample size for each of the several instruments.

In the first term of their first academic semester, students took two required, parallel courses: an integrated course on organisational theory and marketing, two subjects from the behavioural sciences domain, and an integrated methods course on mathematics and statistics. In the first weeks of the course, students filled several self-report questionnaires on learning-related characteristics, such as the learning styles and approaches questionnaires, implicit views on intelligence and effort beliefs, and the academic and achievement motivation instruments.

In the study into the impact of cultural differences, three different statistical approaches will be applied. First, we will investigate differences in levels between the cultural clusters for the relevant individual learning dispositions. This analysis is on cluster level. Second we will do an analysis at individual level by looking at correlations between Hofstede's six cultural indices and all learning dispositions. Third, we will investigate the impact of culture clusters on the bivariate correlations of relevant pairs of learning dispositions, such as the cultural impact on the association between different facets of memorisation. To avoid capitalisation on chance, given the large number of difference in levels and difference in correlations tests, we will do these tests with the conservative significance level of 1%; most observed significance levels (*P* values) are even much smaller.

Results

Descriptive Statistics

The circumstance that not all instruments have been administered in all year classes explains most of the variation in sample sizes visible in Table 1.3. The smallest sample, consisting of four out of nine-year classes, refers to the RoLI data. All nine-year classes deliver data for ILS, AMS, and SATS, whereas six-year classes generate the data for the first ten scales in Table 1.3: implicit theories, effort beliefs, and achievement goals. For the interpretation of the first two columns of Table 1.3, containing scale means and standard deviations, it is important to realise that learning styles and approaches (ILS and RoLI) apply 5-point Likert scales and all other instruments 7-point Likert scales. With that in mind, the RoLI scales appear to exhibit larger variation amongst students than scales of any other instrument. However, the fourth column indicates that the RoLI scales do have high reliabilities, together with academic motivations and achievement goals (with the DRP scale as the single exception, what coincides reliabilities reported by Meyer (2004)). As such, the RoLI instrument stands out in demonstrating relative large variation in scale values over students, but small variation in item values per student. That relative large variation over students is not strongly culture specific: as the last two

Table 1.3 Descriptive statistics of all learning-related student characteristics

	Mean	Standard deviation	*N*	Cronbach's α	ANOVA *F*	ANOVA significance
Entity Theory	3.61	1.28	4,993	.83	5.36	.000
Incremental Theory	4.55	1.17	4,993	.84	2.79	.007
Effort Negative	3.05	0.93	4,993	.68	8.66	.000
Effort Positive	5.25	0.74	4,993	.65	25.27	.000
Outcome Goal	5.79	0.92	4,993	.74	27.62	.000
Ability Goal	4.88	1.05	4,993	.72	3.78	.000
Normative Outcome Goal	4.53	1.38	4,993	.86	26.63	.000
Normative Ability Goal	3.50	1.45	4,993	.90	7.00	.000
Learning Goal	5.42	1.06	4,993	.82	18.48	.000
Challenge/Mastery Goal	4.75	1.23	4,993	.85	3.50	.001
Intrin Motivation to Know	5.40	0.93	6,405	.80	29.24	.000
Intrin Motivation to Accomplish	4.23	1.47	6,405	.92	2.23	.029
Intrin Motivation to Exper Stimulation	4.28	1.24	6,405	.86	39.34	.000
Extr Motivation Identified	5.87	0.81	6,405	.74	24.61	.000
Extr Motivation Introjected	4.76	1.16	6,405	.80	6.60	.000
Extr Motivation External	5.38	1.24	6,405	.77	7.38	.000
A-motivation	1.77	1.14	6,405	.90	5.17	.000
Deep Learning	3.31	0.57	7,096	.79	19.13	.000
Stepwise Learning	3.15	0.52	7,096	.74	52.07	.000
Concrete processing	3.24	0.65	7,096	.65	21.12	.000
Self-regulation of learning	2.83	0.60	7,096	.77	43.09	.000
External regulation of learning	3.41	0.48	7,096	.69	22.16	.000
Lack of regulation	2.60	0.68	7,096	.72	1.02	.414
Personally interested	3.17	0.43	7,015	.24	9.01	.000
Certificate directed	3.64	0.53	7,015	.56	5.38	.000
Self-test directed	3.79	0.63	7,015	.72	6.21	.000
Vocation directed	4.14	0.52	7,015	.68	43.49	.000
Ambivalent	2.27	0.70	7,015	.78	7.60	.000
Construction of knowledge	3.68	0.46	7,030	.73	85.10	.000
Intake of knowledge	3.73	0.48	7,030	.69	34.55	.000
Use of knowledge	3.99	0.49	7,030	.72	26.73	.000
Stimulating education	3.65	0.53	7,030	.79	26.60	.000
Co-operation	3.55	0.56	7,030	.77	39.50	.000
Learning is fact based (FAC)	2.75	1.18	2,911	.89	2.53	.014
Knowledge objects (KOB)	2.89	1.33	2,911	.90	5.10	.000
Memorising as rehearsal (MAR)	2.71	1.01	2,911	.78	2.05	.045
Seeing things differently (SDI)	3.07	1.66	2,911	.97	4.94	.000
Memorising before understanding(MBU)	2.75	0.99	2,911	.88	1.28	.254
Relating ideas (RID)	2.99	1.47	2,911	.93	5.45	.000
Knowledge discrete and factual (KDF)	2.65	0.79	2,911	.65	1.48	.170

(continued)

Table 1.3 (continued)

	Mean	Standard deviation	*N*	Cronbach's α	ANOVA *F*	ANOVA significance
Memorise after understanding (MAU)	2.99	1.45	2,911	.94	3.96	.000
Detail-related pathology (DRP)	2.63	0.65	2,911	.49	1.40	.199
Rereading a text (RER)	2.98	1.40	2,911	.94	5.57	.000
Learning experienced as duty (DUT)	2.62	0.79	2,911	.78	4.85	.000
Memorise with understanding (MWU)	2.95	1.36	2,911	.94	7.48	.000
Fragmentation (FRA)	2.56	0.74	2,911	.71	1.29	.250
Repetition aids understanding (RAU)	2.98	1.48	2,911	.95	4.74	.000
Learning by example (LBE)	2.55	0.91	2,911	.81	2.40	.019
Knowing about learning (KAL)	3.09	1.67	2,911	.96	4.77	.000
Affect	4.59	1.11	6,880	.83	26.54	.000
Cognitive competence	5.21	0.89	6,880	.77	5.14	.000
Value	5.09	0.83	6,880	.78	4.98	.000
noDifficulty	3.60	0.78	6,880	.69	61.02	.000
Interest	5.13	1.05	6,880	.84	18.45	.000
Effort	6.42	0.69	6,880	.77	64.76	.000

Note: Implicit theories, effort beliefs, academic motivations, and achievement motivations are measured using 7-point Likert scales, whereas learning styles and approaches instruments, ILS and RoLI, apply 5-point Likert scales

columns of Table 1.3 indicate, differences between culture clusters are relatively small, be it in most cases still statistically significant, for RoLI scales, in comparison to all other scales. Opposite conclusions refer to the ILS instrument. It demonstrates small standard deviations but relative weak reliabilities. Two of its reliabilities, the first two scales of learning orientations, even demonstrate unsatisfactory levels of reliability (this is in line with findings reported in Boyle et al. (2003)). In contrast, ILS scales demonstrate relative large differences over culture clusters, especially in the learning conceptions component. Further large cultural differences are visible in the achievement motivation scales, at the bottom of Table 1.3.

Differences Between Cultural Clusters in Learning-Related Dispositions

Students of all cultural backgrounds have a stronger incremental theory profile than an entity theory profile: all culture clusters' means for *Incremental Theory* are above the neutral value of four, whereas all means for *Entity Theory* are below these

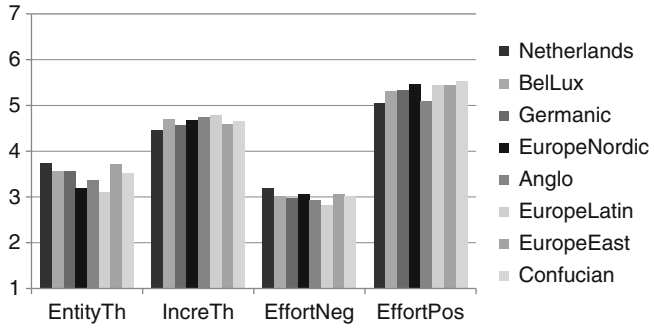

Fig. 1.1 Culture cluster means of implicit theory and effort belief scales

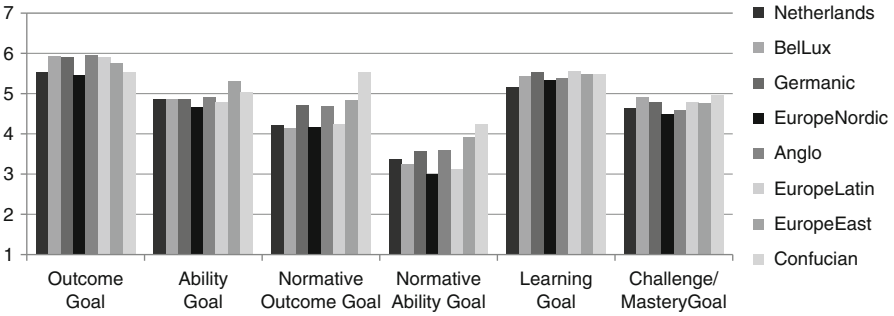

Fig. 1.2 Culture cluster means of achievement goals

neutral values (see Fig. 1.1). However, profiles are rather weak, and no cluster mean deviates from the neutral value with more than one unit. Nordic European and Anglo-Saxon cultures have the strongest profiles with regard to *Entity Theory* and again the Anglo-Saxon culture with regard to *Incremental Theory*. Profiles of effort beliefs are more outspoken: students endorse the *Effort Positive* belief rather than the *Effort Negative* belief. The circumstance that weak implicit theory profiles go together with more outspoken effort belief profiles relativises the strength of meaning system theories, for these imply a strong correspondence between implicit theory profiles and effort belief profiles.

Achievement goals, depicted in Fig. 1.2, demonstrate both cultural effects, as goal type effects. For all cultural clusters except the Confucian, performance goals exceed mastery goals, especially for the *Normative* and appearance *Outcome Goal*, and the *Ability Goal*. Of the two mastery goals, only the *Learning Goal* has mean levels clearly above the neutral level of four. The two cultural cluster effects visible from the data refer to the Confucian and the Nordic European cultural clusters. Students from the Confucian culture score very high on mastery goals *Learning Goal* and *Challenge/Mastery Goal*, both in an absolute sense, meaning in comparison

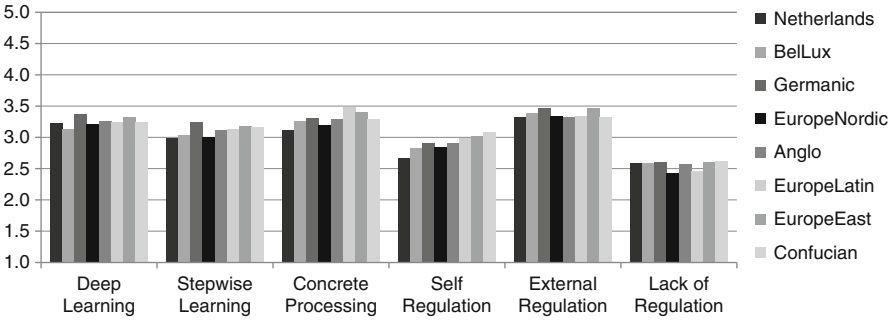

Fig. 1.3 Culture cluster means of learning processing strategies and learning regulation strategies

to students of other cultural clusters, and in a relative sense, which is in comparison to scores on all four performance goals. Students from the Nordic European culture score low on all performance goals, appearance and normative, again in both perspectives: relative to the other cultural clusters and relative to the mastery goal scores.

Cultural differences in learning styles are small, compared to those in goal orientations. Figure 1.3 demonstrates those in processing and learning regulation strategies. Germanic students score, relative to other cultures, high on the *stepwise learning* strategy. But that does not produce a consistent profile, since students from the Germanic cluster score also high on *deep learning*. *Self-regulation of learning* calls attention for two different reasons: it has low mean levels, not far above the neutral value of the scale, 2.5, indicating that students of all cultures are not very confident in their own regulation skills. The lowest scores are for Dutch students, which is a remarkable finding from the perspective that Dutch secondary education has undergone major changes in the direction of student-centred learning, aiming to increase students' abilities of independent, self-steered learning.

Learning conceptions, in Fig. 1.4, again lack strong cultural differences. As reported in the section describing descriptive results, the first two scales have limited reliability, endangering any interpretation. The other scales demonstrate much larger differences between scales, for all cultural clusters, than differences between cultures within specific scales, with the vocational orientation as the dominant learning conception in all cultural clusters.

Learning orientations, in Fig. 1.5, demonstrate cultural differences that are in absolute sense no larger than those in other ILS components, but that are statistically strongly significant (see Table 1.3), implying that the patterns are very consistent for students of the several cultural clusters. Dutch students score low on all orientations, but especially the low score for the constructivist orientation is surprising, given that Dutch secondary education was reformed along the lines of constructivism. The patterns that exist in the other scales deviate from what one would expect. Students from the Confucian culture score low on the conception *intake of*

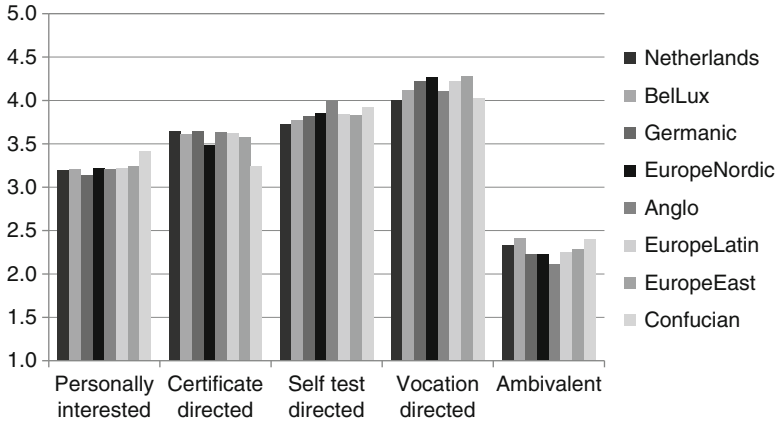

Fig. 1.4 Culture cluster means of learning conceptions

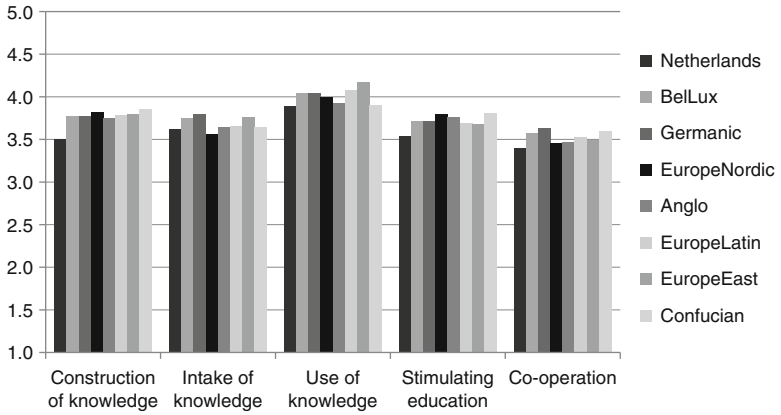

Fig. 1.5 Culture cluster means of learning orientations

knowledge and high on the constructivist conception of learning, in contrast to the traditional view on the Chinese learner, but in agreement with other empirical studies (Tweed and Lehman 2002). Eastern European students combine a strong focus on the applicability of knowledge with a conception that learning should be vocation directed (Fig. 1.4).

When contrasting the cultural differences in the RoLI learning approaches in Fig. 1.6 with those of the ILS learning styles (in Figs. 1.3, 1.4, and 1.5), the suggestion is created that learning approach differences between cultures are much larger. In absolute sense, that is true, but Table 1.3 learns that the statistical significance of differences in learning approaches is generally smaller than those in most of the learning styles scales. So strong diversity amongst cultures goes together with strong diversity within cultures, making the cultural differences of limited size in

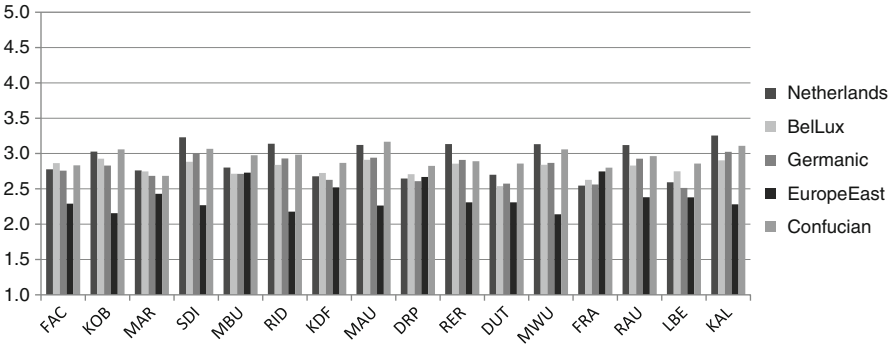

Fig. 1.6 Culture cluster means of learning approaches (restricted to five clusters)

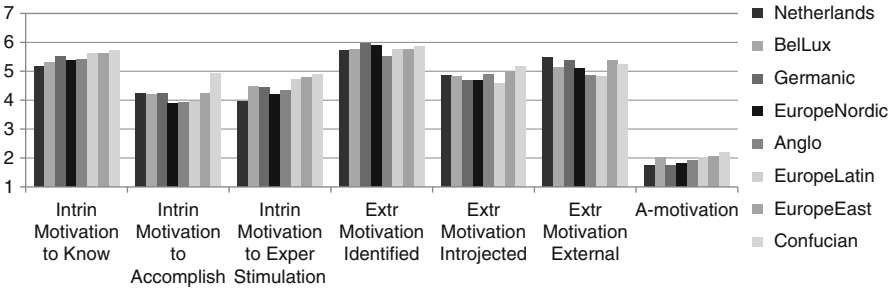

Fig. 1.7 Culture cluster means of learning motivations

relative sense. Cultural differences that are even statistically insignificant are all at the nonadaptive side of the spectrum of learning approach scales: *DRP*, *KDF*, *FRA*, and *MAR*, the four pathological learning scales, and *MBU* as accumulative learning scale. With regard to the four different aspects of memorisation, *MAR*, *MBU*, *MAU*, and *MWU*, it is striking that students of Confucian culture score relative constant, whereas students of other cultures exhibit more variation. We return to this topic in the next section.

Larger cultural differences are in learning motivations, intrinsic motivations in specific. Students from the Confucian culture score overall high on all three types of intrinsic motivation, with the largest differences in *intrinsic motivation to accomplish* and *intrinsic motivation to experience stimulation*. Levels of extrinsic motivation are highest amongst students from the Eastern European culture. *A-motivation* is nearly absent, irrespective of cultural background (see Fig. 1.7).

Subject attitudes to the statistical component of the course are exhibited in Fig. 1.8. Dutch secondary mathematics education differs from high school mathematics programmes in most other countries by devoting a large share of time to covering

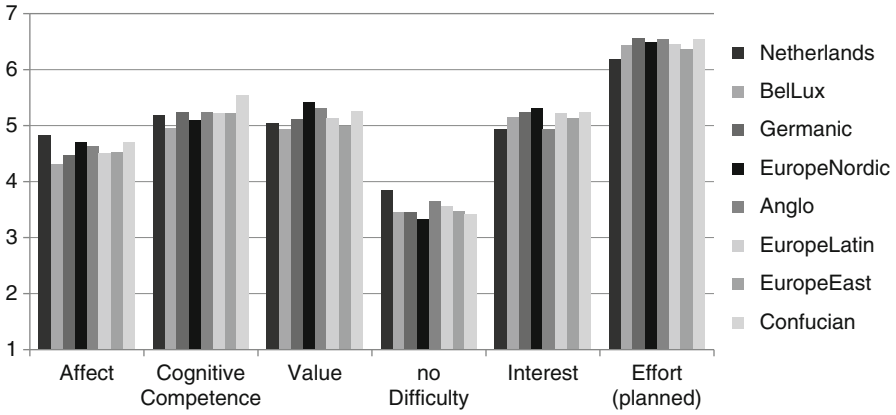

Fig. 1.8 Culture cluster means of subject attitudes

statistics and data analysis, what becomes visible from Fig. 1.8, especially in the no*Difficulty* scale. All cluster means are below the natural level of four, indicating that students from all backgrounds regard statistics as a difficult subject, but Dutch students have clearly the most positive scores. At the same time, they indicate to be familiar with the subject, visible from relative high *Affect* and *Cognitive Competence* levels, and indicate they do not need, or at least plan, to spend a lot of *effort* in studying statistics. Being familiar with the task does not create *interest*; levels of this scale are amongst the lowest. Students from northern European countries have the highest *interest* levels and assign the greatest *value* to the subject. As was clear from Table 1.3, cultural differences, especially in *noDifficulty* and *Effort*, are highly significant.

The Association of Cultural Indices with Learning-Related Dispositions

An alternative way to express dependencies between cultural backgrounds of students and their learning-related dispositions is through the association of these student characteristics and Hofstede's cultural indices. In order to assess these dependencies, we first need to get an impression of the variation in cultural indices over different cultures. We will do so by means of Table 1.4, which exhibits mean values of Hofstede's cultural indices for the seven clusters distinguished in our study. Except for the Netherlands, the values reported in Table 1.4 are weighted means for the several nations constituting a specific cultural cluster, where the weighting takes into account the number of students in our study having the specific nationality.

Table 1.4 Mean values of cultural indices for eight culture clusters

Cluster	Power distance	Individualism versus collectivism	Masculinity versus femininity	Uncertainty avoidance	Long-term versus short-term orientation	Indulgence versus restraint
Netherlands	38	80	14	53	67	68
BelLux	63	74	54	93	81	57
Germanic	35	67	66	65	83	40
EuropeNordic	29	70	11	38	42	67
Anglo	56	59	54	63	37	63
EuropeLatin	57	67	53	82	57	40
EuropeEast	66	52	50	86	58	25
Confucian	77	20	64	35	88	26

Power distance splits the cultures between Anglo and middle and northern European nations and all other nations. *Masculinity versus femininity* separates the Netherlands together with the Nordic countries from all other nations. Most nationalities in this study have an individualistic orientation, except for the Confucian culture.

Associations between the cultural indices of the Hofstede's model and learning-related dispositions are best expressed in terms of intercorrelations. Due to the large sample size, most intercorrelations are statistically significant, in general at 1% level. Substantial correlations can be found for the last five cultural indices, but not for power distance, as is clear from Table 1.5.

For both the *individualism versus collectivism* and *indulgence versus restraint* indexes, nearly all correlations are negative, indicating that students from a collectivist culture score high relative to students from an individualistic culture and students from a restraint culture score high relative to students from a culture characterised by more indulgence, on most of the (adaptive) learning dispositions. Substantial effects exist for different types of intrinsic motivation, normative performance goals, self-regulation of learning, the constructivist learning conception, and the willingness to invest a lot of effort in learning.

A somewhat similar pattern exists for *masculinity versus femininity*, this time with mainly positive correlations, indicating that students from a masculine culture score high relative to students from a feminine culture on most (adaptive) learning dispositions. That masculine culture is associated with a strong tendency to *normative outcome goal* setting, *construction of knowledge*, and *effort*ful learning.

Uncertainty avoidance and *long-term versus short-term orientation* demonstrate correlations with learning-related characteristics in size in between the other three cultural indices. Again, there is a major role for the constructivist learning conception, together with effortful learning.

In line with the outcomes of the ANOVA's reported in Table 1.3, intercorrelations based on the learning approaches, derived from the RoLI model, are more modest in size than those of other instruments.

Table 1.5 Correlations between Hofstede's cultural indices and students' learning dispositions

	Power distance	Individualism versus collectivism	Masculinity versus femininity	Uncertainty avoidance	Long-term versus short-term orientation	Indulgence versus restraint
Entity Theory	.004	.048**	−.055**	−.043**	−.027	.055**
Incremental Theory	.023	−.037**	.035*	.038**	.007	−.038**
Effort Negative	.007	.071**	−.103**	−.073**	−.062**	.096**
Effort Positive	.022	−.144**	.169**	.111**	.075**	−.169**
Outcome Goal	.001	−.131**	.186**	.132**	.102**	−.163**
Ability Goal	.039**	−.039**	.005	.021	−.032*	−.031*
Normative Outcome Goal	−.026	−.155**	.161**	.053	.096**	−.174**
Normative Ability Goal	−.003	−.071**	.052**	.009	.031*	−.073**
Learning Goal	−.006	−.131**	.155**	.096**	.080**	−.146**
Challenge/Mastery Goal	.014	−.047**	.063**	.060**	.023	−.053**
Intrin Motivation to Know	.006	−.138**	.168**	.097**	.098**	−.170**
Intrin Motivation to Accomplish	.020	−.014	.002	−.019	.009	−.008
Intrin Motivation Stimulation	.056**	−.161**	.185**	.148**	.102**	−.189**
Extr Motivation Identified	−.047**	−.093**	.147**	.062**	.106**	−.135**
Extr Motivation Introjected	.056**	.019	−.067**	−.024	−.051**	.058**
Extr Motivation External	−.039**	.046**	−.042**	−.057**	−.003	.035**
A-motivation	.059**	−.030*	.000	.041**	−.021	−.007
Deep learning	−.078**	−.061**	.116**	.022	.078**	−.108**
Stepwise learning	−.041**	−.158**	.216**	.103**	.145**	−.203**
Concrete processing	−.001	−.087**	.136**	.093**	.063**	−.127**
Self-regulation of learning	.014	−.156**	.193**	.118**	.100**	−.191**
External regulation of learning	−.023	−.089**	.136**	.087**	.102**	−.130**
Lack of regulation	−.005	−.015	.017*	.002	.028**	−.015
Personally interested	.065**	.004	−.059**	−.028*	−.077**	.045**

(continued)

Table 1.5 (continued)

	Power distance	Individualism versus collectivism	Masculinity versus femininity	Uncertainty avoidance	Long-term versus short-term orientation	Indulgence versus restraint
Certificate directed	−.039**	.040**	−.002	.010	.008	.015
Self-test directed	.017	−.065**	.070**	.039**	.030*	−.067**
Vocation directed	−.023	−.130**	.192**	.125**	.102**	−.190**
Ambivalent	.036**	.045**	−.070**	−.023	−.025*	.064**
Construction of knowledge	.021	−.211**	.269**	.185**	.160**	−.262**
Intake of knowledge	−.027**	−.100**	.176**	.111**	.139**	−.164**
Use of knowledge	.016	−.102**	.148**	.114**	.084**	−.149**
Stimulating education	.019	−.123**	.155**	.099**	.087**	−.144**
Co-operation	−.027*	−.119**	.191**	.102**	.142**	−.176**
Learning is fact based (FAC)	−.013	.013	−.001	−.007	.019	.015
Knowledge objects (KOB)	−.020	.061**	−.067**	−.061**	−.030	.080**
Memorising as rehearsal (MAR)	−.022	.039*	−.031	−.031	−.004	.043*
Seeing things differently (SDI)	−.033	.053**	−.063**	−.063**	−.013	.072**
Memorising before understanding(MBU)	−.007	.029	−.040*	−.036	−.018	.036*
Relating ideas (RID)	−.030	.056**	−.067**	−.064**	−.018	.077**
Knowledge discrete and factual (KDF)	.013	.005	−.023	−.021	−.013	.029
Memorise after understanding (MAU)	−.026	.040*	−.059**	−.063**	−.018	.069**
Detail-related pathology (DRP)	.026	.003	−.026	−.008	−.019	.015
Rereading a text (RER)	−.031	.062**	−.075**	−.068**	−.028	.084**

Learning experienced as duty (DUT)	−.017	.053**	−.075**	−.082**	−.030	.075**
Memorise with understanding (MWU)	−.031	.075**	−.093**	−.087**	−.032	.101**
Fragmentation (FRA)	.021	−.016	.014	.012	.011	−.023
Repetition aids understanding (RAU)	−.025	.047*	−.059**	−.057**	−.018	.069**
Learning by example (LBE)	.026	.028	−.032	−.021	−.034	.042*
Knowing about learning (KAL)	−.029	.054**	−.064**	−.061**	−.018	.072**
Affect	−.010	.094**	−.154**	−.120**	−.116**	.136**
Cognitive competence	−.028*	−.035*	.028*	−.027*	.018	−.042**
Value	−.025*	−.039**	.040**	−.005	.016	−.040**
noDifficulty	−.013	.168**	−.235**	−.154**	−.153**	.218**
Interest	−.006	−.104**	.132**	.083**	.091**	−.131**
Effort	−.028*	−.167**	.254**	.147**	.168**	−.228**

Note: *Statistically significant at 5%; **Statistically significant at 1% (all correlations larger than .050 in absolute value are statistically significant at 0.05% level)

Cultural Differences in Intercorrelations of Learning-Related Dispositions

The most informative part of the statistical analysis is the investigation of cultural differences in the intercorrelations of learning-related student characteristics. In contrast to the analysis of cultural differences in first-order moments, the levels, the analysis of cultural differences in second-order moments, the correlations, is not likely to be impacted by selection effects. And several hypotheses regarding the impact of culture on learning dispositions are best tested by investigating differences in second moments. The size of the correlation matrix is however prohibitive to be able to investigate the full matrix. Instead, we will focus on the impact of culture on intercorrelations of implicit theories and achievement goals (see Table 1.6) and those of different aspects of memorisation as learning process (see Table 1.7). The large number of differences between correlations investigated is also the reason only to report cases where the significance level of the difference between correlations is below .001 or 0.1%, this to prevent capitalisation on chance.
In Table 1.6, largest differences between cultures are found in the intercorrelations of learning goals and performance goals with the positive effort belief, the scale with the most significant difference in level between cultural clusters. Positive effort belief is a much stronger predictor of *Outcome Goal*, *Ability Goal*, and *Normative Outcome Goal*, for students from a Confucian culture, than for any other culture cluster. The negative effort belief, as well as the two implicit theories, not only exhibit less pronounced culture differences (see Table 1.3) but also lack to demonstrate any systematic pattern in intercorrelations.

Table 1.7 focuses on different operationalisations of the learning process memorisation. Data is from five cultural clusters, due to lower sample sizes of RoLI data. The two memorisation aspects that shape transformative learning, *MAU* and *MWU* (*memorisation after* and *with understanding*), are strongly related within all cultural clusters. They correlate that strong, that the two scales do not empirically distinguish, irrespective of the cultural background of the student. But for all other intercorrelations, outcomes are radically different. Whereas all intercorrelations for the Confucian culture are that high as to make all different operationalisations empirically not distinct, so that a one-dimensional operationalisation of the memorisation concept fits the data as adequate as the current four-dimensional operationalisation, other cultures demonstrate clear differences between transformative, accumulative, and pathological aspects of memorisation. In contrast, students from the cultural clusters of the Netherlands, BelLux, Germanic, and EuropeEast do distinguish between the types of memorisation that support transformative learning, those that support accumulative learning, and those that support pathological forms of learning.

Discussion and Conclusions

When comparing levels of students' learning-related dispositions amongst students of different cultural backgrounds, the unique position of Confucian students with regard to their positive effort beliefs and learning approaches based on memorisation

is striking. Both observations suggest that the profile of the Chinese learner might be less clear than suggested in the literature. According to that literature, such as Tweed and Lehman (2002), Confucian forms of deep learning include processes as memorisation and in this way distinguish from deep learning as conceptualised in Western learning theories, where deep learning is shaped by relating, structuring, and critical processing of new information (as in Vermunt's learning styles theory). However, not all manifestation of memorisation contribute to deep learning within the Confucian after tradition, but only those aspects of memorisation that follow the forming of meaning in time – that is, memorisation that takes place after understanding and with that understanding. In Meyer's learning approaches framework, this refers to the aspects of memorisation that take place after and with understanding. A crucial requirement for the existence of such a different type of deep learning is that students can distinguish these different facets of memorisation. According our empirical analysis, students of different cultural backgrounds do distinguish the transformative, accumulative, and pathological forms of memorisation (at least to some extent, intercorrelations indicate that the three facets share a common component of about 25% of variation), with one exception. Only amongst students of Confucian background, intercorrelations between transformative, accumulative, and pathological forms of memorisation are that high that the facets tend to collapse in one, common concept. This also explains the circumstance that Fig. 1.6 exhibits very little variation in levels of the four memorisation facets for the Confucian culture and more variation for the other culture clusters.

Another conjecture in the Tweed and Lehman (2002) paper refers the association between implicit theories and effort beliefs: these relationships would describe learners from Western cultures better than learners from the Confucian culture. Our empirical analysis again suggests differently: the correlations between *entity theory* and the *effort negative* belief, and the correlations between i*ncremental theory* and the *effort positive* belief are in the Confucian cluster of the same order of size as in all other cultural clusters, and in fact nowhere as large. Cultural differences do however exist with regard to the relationships amongst performance-oriented achievement goals and the relationships between effort beliefs and achievement goals. In all cultural clusters, the two appearance goals, *outcome goal* and *ability goal*, and the two normative goals, *normative outcome goal* and *normative ability goal*, demonstrate substantial correlation. But in the Confucian cluster, all four performance goals exhibit substantial correlations and find their shared explanation in the positive effort belief.

Learning theory has a rich tradition of dichotomies in describing learning-related student characteristics: surface versus deep learning, intrinsic versus extrinsic motivation, self-regulation of learning versus external regulation, and mastery goals versus performance goals. If not explicitly, than at least implicitly, these classifications are viewed as exclusive. That is, a learner is assumed to be surface learning, or deep learning, but not both, and is intrinsically motivated for learning, or extrinsically, but not both (a conception that is articulated by the well-known learning credo that 'extrinsic motivation drives out intrinsic motivation'). This study contributes evidence to the notion that these classifications may be meaningful in themselves, but not as a means to classify students. Categories do not need to be exclusive, and if anything, cultural differences tend to manifest as balanced profiles, which is just the opposite of the dichotomy case.

Table 1.6 Intercorrelations of implicit theories and achievement goals, for Dutch, BelLux, Germanic,

	Entity Theory	Incremental Theory	Effort Negative	Effort Positive
Entity Theory	1.			
Incremental Theory	−.75/−.65/ −.74/ −.64/−.57/ −.72/−.72/ −.54	1.		
Effort Negative	.33/.35/.32/ .37/.47/ .48/.44/.50	−.20/ns/ −.21/ns/ns/−.33/ −.21/−.43	1.	
Effort Positive	−.14/−.12/ −.12/ns/ns/ −.37/−.26/ns	.26/.19/.25/.39/.41/ .56/.42/.55	−.30/−.28/ −.37/−.50/ −.32/−.41/ −.27/−.29	1.
Outcome Goal	−.13/−.12/ −.10/ns/ns/ −.34/ns/ns	.21/.18/.15/ns/ .38/.38/ns/.38	−.14/ns/ −.17/−.47/ns/ −.39/ns/ns	.36/.28/.34/ .49/.31/ .57/.24/.78
Ability Goal	−.14/ns/ −.04/ns/ −.37/ns/ns/ns	.23/.22/.15/ns/ .40/ns/.19/.50	−.11/ns/ −.07/ns/ ns/ns/ns/ns	.37/.29/.31/ .43/.43/ .24/.37/.65
Normative Outcome Goal	ns/ns/ns/ns/ −.41/ns/nsns	.11/ns/.06/ns/ .48/ns/ns/.39	ns/ns/ns/ns/ ns/ns/ns/ns	.19/ns/.18/ns/ ns/ns/ .30/.60
Normative Ability Goal	ns/ns/.11/ns/ns/ .36/ns/ns	.07/ns/ns/ns/.53/ −.23/ns/ns	ns/.22/.10/ns/ns/ .34/ns/ns	.08/−.13/.04/ ns/ns/ns/ .18/ns
Learning Goal	−.13/ns/ −.08/ns/ns/ −.29/−.20/ns	.17/.16/.12/ns/ .35/.32/.22/ns	−.13/ns/−.16/ns/ns/ −.30/ns/ns	.32/.32/.28/ ns/.41/ .46/.21/.74
Challenge/ Mastery Goal	−.06/ns/ −.06/ns/ns/ −.27/ns/ns	.10/.17/.10/ns/ns/ .35/ns/ns	−.06/ns/−.11/ −.39/ns/ −.23/ns/ns	.24/.30/.19/ .47/.44/ .35/ns/.39

Outcome Goal	Ability Goal	Normative Outcome Goal	Normative Ability Goal	Learning Goal	Challenge/ Mastery Goal
1.					
.49/.30/.35/ .42/.60/ .37/.53/.67	1.				
.13/ns/.12/ ns/.35/ns/ ns/.67	.46/.51/.53/ .53/.68/ .59/.56/.82	1.			
ns/−.13/ −.04/ns/ ns/ns/ns/ns	.40/.42/.51/ .42/.44/ .49/.51/.70	.81/.75/.74/ .77/.72/ .75/.84/.68	1.		
.55/.59/.54/ .71/.62/ .66/.39/.75	.30/.17/.14/ ns/.44/ns/ .23/.54	ns/−.15/−.09/ ns/ns/ ns/ns/.58	−.08/−.20/ −.13/−.54/ ns/ns/ns/ns	1.	
.43/.48/.43/ .76/.45/ .46/.31/.43	.23/.33/.11/ ns/.45/. 66/.22/ns	−.09/−.20/ −.11/ns/ns/ ns/ns/ns	−.09/−.09/ −.07/ns/ns/ ns/ns/ns	.77/.77/.74/ .79/.80/ .71/.82/.73	1.

Table 1.7 Intercorrelations of different aspects of memorisation-based learning processes, for Dutch, Germanic, BelLux, EuropeEast, and Confucian cultural clusters, respectively

	MAR	MBU	MAU	MWU
MAR	1.			
MBU	.55/.50/.51/.51/.72	1.		
MAU	.51/ns/.52/.41/.77	.53/.25/.47/.29/.83	1.	
MWU	.52/.ns/.55/.48/.72	.51/ns/.45/ns/.73	.85/.91/.89/.84/.92	1.

The investigation of cultural differences in intercorrelations of learning-related dispositions suggests the weakness of another, implicit, assumption in learning theories: that of cultural invariance, the idea that decontextualised learning theories can exist. Important counterexamples are provided, for example, the circumstance that students from the Confucian culture differentiate several facets of performance goals and several facets of memorisation, less than students from other cultural clusters.

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Chapter 2
The Relationship Between Learning Styles and the Effectiveness of VSC Modules in Finance Education

Don Cyr

Introduction

In many business education programmes, failure or noncompletion rates in introductory finance courses can be significantly greater than those in other subject areas. As in many other mathematically based courses, classroom instruction is often critical for success. A common pedagogical tool employed in such subject areas, known as the "chalk and talk" approach (Watts and Becker 2008), is one whereby the instructor proves a formula or application in handwritten steps on a chalk- or whiteboard while describing the process verbally. At the same time, the course participants simultaneously replicate the steps in their own handwriting. Although a somewhat simple instructional approach, the learning modalities engaged are relatively complex, involving visual, auditory and perhaps, through the transcription process, a form of kinaesthetic learning. Disadvantages to the approach include the issue that students may find it difficult to reconstruct nuances of the proof or problem solution from their handwritten notes, at a later date. This may be an even greater problem for international students whose proficiency in the language of instruction may be somewhat weak.

Recently, however, the advent of tablet PCs and electronic ink, combined with video screen capture (VSC) software, allows for the easy and cost-effective recording of both visual and auditory components of a mathematical lecture, with very simple technological requirements and training on the part of the instructor. As a result, course participants can be provided with a concise and richer form of e-learning objects than simply electronic notes or Power Point slides. The ability to stop, start

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P. Van den Bossche et al. (eds.), *Facilitating Learning in the 21st Century: Leading through Technology, Diversity and Authenticity*, Advances in Business Education and Training 5, DOI 10.1007/978-94-007-6137-7_2,

and replay the modules also affords students the ability to engage the material at their convenience, a distinct benefit over and above that of classroom instruction. Indeed, a number of recent studies have indicated that learning modules created with tablet PC and VSC technology can be of significant aid in cognition (Folkestad and Miranda 2002; Bonnington et al. 2007) and particularly for mathematically based material (Aminifar et al. 2007). Similar benefits have been noted in the use of Flash™ videos for homework solutions (Grinder 2008). Cyr (2010, 2011) also finds that students of financial mathematics perceive the value of VSC instructional modules to be relatively high.

The popularity of VSC modules for teaching mathematical concepts has also recently captured the attention of the popular press, due to the educational website *Khan Academy* (http://www.khanacademy.org/). Established in 2006 by Salman Khan, a former hedge fund employee, Khan Academy provides free access to over 2,500 VSC modules on a variety of educational topics, including basic mathematics. With $3,000,000 in funding, received in 2010 from the Gates Foundation and Google Inc., Khan Academy is believed to have had a major impact on the teaching of mathematics in the United States. In some cases, secondary schools have opted to do away with their paper-based textbooks, relying solely on the website (Urstadt 2011). In addition, the website is sometimes used as a basis for the "flipped classroom" instructional approach, whereby lecture material is covered by students on their own time, before attending classes primarily focused on problem solving (Thompson 2011).

The use of VSC modules gives rise to several pedagogical research questions which Cyr (2011) attempts to address and the current study builds upon. In particular, the specific value and use of VSC modules in the learning process are of interest and whether students differ in terms of their response to the technology. As well, although the value of electronic ink for synchronous on-line instruction has been explored (Loch and McDonald 2007), the question as to whether students believe that VSC modules could be used to replace in-class instruction is of interest.

With the goal of examining several hypotheses, Cyr (2011) surveyed 86 MBA students enrolled in a 13-week introductory corporate finance course, with respect to their reported use and perceived value of several VSC modules. The modules were designed to provide proofs and applications of relatively difficult financial concepts. The 86 students were comprised of both native English language speakers, or students with a high proficiency in English (the language of instruction), as well as a cohort of international students whose English language proficiency was somewhat lower. In addition to examining their ultimate performance on examination questions covering related material, the hypotheses explored through the study were as follows: Hypothesis 1, VSC modules are of significant reported use in learning complex financial concepts; Hypothesis 2, VSC modules are of significant perceived value in learning complex financial concepts; Hypothesis 3, students find the use of VSC modules to be of value as a substitution for in-class instruction; Hypothesis 4, the use of VSC modules is of significant perceived value to international students whose proficiency in the language of instruction is weak; Hypothesis 5, the perceived value of the VSC modules is dependent upon the subject's primary intelligence or

learning style; and Hypothesis 6, the actual effectiveness of VSC modules is dependent upon the subject's primary learning style.

The findings indicated that both domestic and international students perceived the usefulness of the VSC modules to be relatively high, although the stated use of the modules was significantly greater among international students. Both the domestic and international students indicated little support for the replacement of in-class instruction with VSC modules, although the support was statistically greater among international students. Although the results indicate that individuals with a linguistic or interpersonal learning style appeared to use and value the modules the most, they were also among the lowest in actual test performance based on rank ordering.

The purpose of this chapter is to examine these preliminary results in more detail and in particular with a more robust statistical approach. The chapter proceeds by briefly introducing Gardner's nine intelligences or learning styles, followed by a description of the VSC modules employed for the study, the subjects and survey instrument. The basic results are reviewed, and an analysis, focused primarily on the impact of learning styles, follows. The chapter then concludes, along with suggestions for further research.

Learning Styles

The concept of multiple intelligences and its potential impact on learning and instructional approach has received much attention in recent years, since the original work of Howard Gardner (1983). Gardner defined seven "intelligences" (linguistic, musical, bodily–kinaesthetic, spatial/visual, interpersonal, logical–mathematical, intrapersonal) and later (Gardner 1999), an additional two (naturalist and existentialist). He postulates that the nine intelligences relate to the methods in which an individual best receives and retains information, providing an indication of the tools and techniques, or learning styles, that would facilitate comprehension and retention. An individual that exhibits a musical intelligence would, for example, tend to prefer and respond better to learning activities that incorporate music or rhythm. It is also postulated that multiple intelligence has a significant impact on chosen careers. Table 2.1 provides a brief summary of Gardner's list of intelligences and the preferred learning styles associated with each.

Although the theory of multiple intelligences is not without its critics (Stahl 1999; Waterhouse 2006a, b), it remains a popular categorization applied in many educational settings. It is interesting to note that much of the evidence supporting or refuting the theory of multiple intelligences is based on studies of the impact of music on learning and that much research remains as to the validity of the results. A succinct review of the literature in this context is provided by Berk (2008).

The question arises as to whether individuals exhibiting different primary learning styles would respond differently to VSC modules as learning tools, either in terms of perceived value and use, as well as ultimate comprehension. It would seem

Table 2.1 Gardner's list of intelligences and their preferred learning styles

Intelligence	Preferred learning style
Naturalist	Environment, nature
Musical	Music, sounds, rhythm
Logical–mathematical	Numbers, mathematics and logic
Existential	Spiritual, larger issues, affect on society
Interpersonal	Human communication, cooperation, teamwork
Kinaesthetic	Physical experience, movement, touch and feel
Linguistic	Words and language
Intrapersonal	Self-reflection, self-discovery
Visual	Pictures, shapes, images, 3D

reasonable to assume, for example, that individuals exhibiting a logical–mathematical learning style would tend to be inherently oriented towards the mathematically based material typically covered in an introductory finance course and presented in the VSC modules. It is possible, however, given the voice-over or accompanying verbal exposition aspect of the modules, that verbally oriented individuals, such as the linguistic and interpersonal learner, may also extract particular benefit. The modules may also be a valuable learning tool for individuals exhibiting a visual learning style, given the visual presentation. The kinaesthetic learner may also find value in the action or movement captured in the modules.

VSC Modules and Survey Data

Survey Participants

During the 2010 fall academic term (September through December), several VSC modules, focusing on similar concepts in financial mathematics, were made available to course participants enrolled in an introductory corporate finance course (Cyr 2011). The course is a mandatory component of the Masters in Business Administration (MBA) degree programme at Brock University, Canada. The MBA programme at Brock University is offered in two distinct streams. One stream (domestic) is for participants who are native English speakers, or whose fluency in the English language is fairly high. The second stream (international) is designed primarily for international students whose score on an English language proficiency test is relatively low. Consequently, the existence of the two streams provided for the testing of the relative value of the VSC modules for those students who may exhibit a lack of proficiency in the language of instruction. In total, 86 students were subjects in the survey, 25 of which were enrolled in the domestic stream, while 61 students were members of the international stream. The countries of origin, for students in the international stream, were approximately 60% China, 30% Saudi Arabia, 8% India and 2% other.

VSC Modules

Using a tablet PC with VSC software and headset microphone, VSC modules were created, with electronic ink software (Microsoft Windows Journal™), of the proof of two relatively difficult but related concepts in introductory financial mathematics. As noted in Cyr (2010), the instructor's experience in creating the modules was a relatively positive one, with few technical difficulties. A key advantage of the technology is that the instructor derives a mathematical proof or formula in electronic ink using their own handwriting, as opposed to mathematical text software which can frequently be difficult or time consuming to employ.

The first VSC module presented to the students dealt with the concept of the present value of a growing annuity, which has often represented a relatively difficult formulation for students to grasp. It is the formula for calculating the present value of a series of cash flows that is growing at a constant annual growth rate (g) for a fixed number of periods (n). The first cash flow (C_1), which occurs at the end of the first year, then grows at the annual growth rate in subsequent years. The present value (PV) of the total series of cash flows, calculated using a fixed annual interest or discount rate (k), is given by

$$\text{PV} \quad \frac{C_1}{k \quad g} \quad \frac{C_1(1 \quad g)^n}{k \quad g}(1 \quad k)^{\ n}$$

For both the domestic and international classes, an exposition of the formula was first developed through in-class instruction using the "chalk and talk" approach. The VSC module relating to the concept was then made available to course participants, for further review and reference, through the course website. Figure 2.1 provides a screen capture of the VSC module showing the development of the formula.

The second but related concept is known as the two-stage dividend growth model for share valuation. In this model, it is assumed that the dividend per share, paid by a firm to its common shareholders after the first year (D_1), grows at a constant growth rate (g_1) for a fixed number of years (n). Subsequent to the nth period, the dividend continues to grow but at a different growth rate (g_2). The share valuation (P) is represented by the present value of the assumed dividends, given a discount rate k:

$$P \quad \frac{D_1}{k \quad g_1} \quad \frac{D_1 \ 1 \quad g_1}{k \quad g_1}^{\ n} \ 1 \quad k \quad ^{n} \quad \frac{D_1 \ 1 \quad g_1}{k \quad g_2}^{\ n \ 1} \ 1 \quad g_2 \quad 1 \quad k \quad ^{n}$$

The formula is related to the concept of the present value of a growing annuity; however, it has the added complexity of subsequent cash flows after the nth period. Course participants were provided with two VSC modules as part of a lecture on the topic of share valuation. The first VSC module outlined the development and intuition of the formula, while the second module provided a numerical example of its use. A key difference in this second use of VSC modules was that an in-class exposition of the topic was not provided; students were simply asked to review and learn

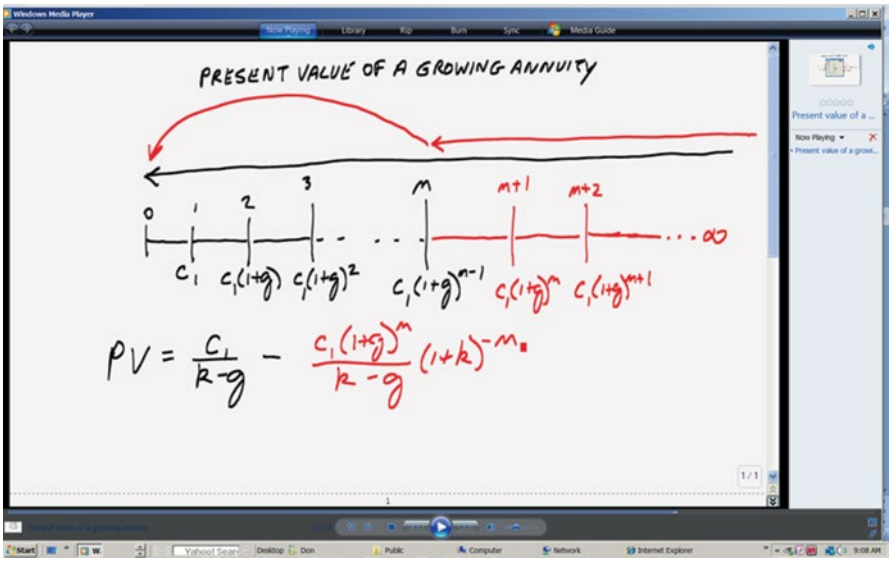

Fig. 2.1 Screen capture of VSC module on the present value of a growing annuity formula

the concept using the VSC modules. Consequently, the perceived value of the VSC modules, as a substitute for in-class instruction, could be assessed.

Survey Instrument

At the end of the course, students in both streams were asked to complete a survey with respect to the nature of their use of the VSC modules, as well as their perception of their usefulness (Cyr 2011). Similar to the survey carried out in the preliminary study of Cyr (2010), with respect to VSC module use, students were specifically asked whether they viewed the modules more than once, as part of their studying, and whether they stopped the modules or replayed sections in order to facilitate their comprehension. Although actual use on the part of the subjects is not captured in the study, the self-reporting provides a proxy.

Two subsequent questions in the survey related to the perceived usefulness of the modules for (1) understanding the concepts and (2) helping the student to achieve a higher course grade. In addition, with respect to the two-stage growth dividend valuation model, respondents were asked whether they felt that an in-class presentation was necessary given the VSC modules supplied. As noted above, in this second application, an accompanying in-class presentation was not provided.

In order to measure a student's primary learning style, Cyr (2011) included a learning style inventory as part of the survey. The inventory consisted of nine sections, corresponding to Gardner's nine intelligences, with ten statements associated

with each section. The ten statements described aspects of behaviour that may be consistent with a particular learning style. For example, the section relating to a logical intelligence consisted of the following ten statements:

Section 3 (*Logical–mathematical intelligence***)**

_____ I keep my things neat and orderly.
_____ Step-by-step directions are a big help.
_____ Solving problems comes easily to me.
_____ I get easily frustrated with disorganized people.
_____ I can complete calculations quickly in my head.
_____ Puzzles requiring reasoning are fun.
_____ I can't begin an assignment until all my questions are answered.
_____ Structure helps me be successful.
_____ I find working on a computer spreadsheet or database rewarding.
_____ Things have to make sense to me or I am dissatisfied.

For each of the nine sections, the survey participant was asked to indicate which of the statements they felt was a good representation of their own preferences or behaviour. They were allowed to indicate an affinity with as many of the ten statements provided in each section, as they wished. Finally, a student's actual comprehension of the material was measured through a final exam question relating to the material covered in the VSC modules as well as their final grade on a comprehensive exam.

Results

Reported Use and Perceived Value of VSC Modules

Table 2.2 provides a summary of the survey results from Cyr (2011), with respect to the reported use and perceived value of the VSC module, relating to the concept of the present value of a growing annuity.

As indicated in Table 2.2, approximately 70% of both domestic and international students reported viewing the module more than once and stopped or replayed a portion of it. However, a significantly higher percentage of international students (73.8% reported viewing more than once, and 77% stopped or replayed) reported doing so, than did the domestic students (56 and 48%, respectively). Similar results were obtained with respect to the two-stage dividend growth modules. In summary, international students reported a significantly greater use of the modules.

No significant differences were noted between domestic and international students, however, in terms of perceived usefulness of the modules. Table 2.2 indicates that 62% of the domestic students and 65% of international students agreed or strongly agreed that the growing annuity module was useful. In addition, 52 and 63% of the domestic and international students, respectively, agreed or strongly agreed with the

Table 2.2 Survey responses to VSC video on the present value of growing annuity concept

Question	*Stream* Domestic (D) Int'l (I)	Yes	No				
Viewed lesson more than once?	D (25)	56.0% (14)	44.0% (11)				
	I (61)	73.8% (45)	22.2% (16)				
	Total (86)	68.6% (59)	31.4% (27)				
$\chi^2=2.6$ ($p=.1069$) Yates' $\chi^2=1.84$ ($p=.1749$)							
Stopped or replayed portion	D (25)	48.0% (12)	52.0% (13)				
	I (61)	77.0% (47)	23.0% (14)				
	Total (86)	68.6% (59)	31.4% (27)				
$\chi^2=6.947$ ($p=.00839$) Yates' $\chi^2=5.664$ ($p=.0173$)							
		(1) Strongly disagree	(2) Disagree	(3) Neutral	(4) Agree	(5) Strongly agree	Average score
Useful for understanding	D (25)	8.0% (2)	8.0% (2)	20.0% (5)	32.0% (8)	32.0% (8)	3.72
	I (61)	6.6% (4)	3.3% (2)	24.6% (15)	44.3% (27)	21.3% (13)	3.70
	Total (86)	7.0% (6)	4.7% (4)	23.3% (20)	40.7% (35)	24.4% (21)	3.71
$\chi^2=2.548$ ($p=.6361$) Yates' $\chi^2=5.664$ ($p=.9024$)							
Will help to achieve a higher grade?	D (25)	4.0% (1)	0.0% (1)	40.0% (10)	32.0% (8)	20.0% (5)	3.60
	I (61)	3.3% (2)	6.6% (4)	16.4% (10)	54.1% (33)	19.7% (12)	3.80
	Total (86)	3.5% (3)	5.8% (5)	23.3% (20)	47.7% (41)	19.8% (17)	3.74
$\chi^2=6.292$ ($p=.1784$) Yates' $\chi^2=4.959$ ($p=.2915$)							

statement that the modules would help them to achieve a higher grade. Similar results were found with respect to the perceived usefulness of the dividend growth modules. In general, these results are consistent with those previously obtained in Cyr (2010).

Replacement of In-Class Instruction by VSC Modules

Table 2.3 provides the results of the survey question in which students were asked whether they felt that an in-class presentation of the two-stage dividend growth

Table 2.3 Survey responses to VSC modules on two-stage dividend growth valuation model

Question	*Stream* Domestic (D) Int'l (I)	(1) Strongly disagree	(2) Disagree	(3) Neutral	(4) Agree	(5) Strongly agree	Average score
In-class presentation not required	D (25)	56.0% (14)	12.0% (3)	24.0% (6)	8.0% (2)	0.0% (0)	1.84
	I (61)	21.3% (13)	36.1% (22)	27.9%(17)	11.5% (7)	8.2% (5)	2.39
	Total (86)	31.4% (27)	29.1% (25)	26.7% (23)	10.5% (9)	5.80% (5)	2.23
$\chi^2 = 12.904$ ($p = .0118$) Yates $\chi^2 = 9.685$ ($p = .0461$)							

model was not required, given the VSC modules provided on the topic. The purpose of this question was to provide an indication as to whether VSC modules could replace in-class instruction. In general, few students (8% of domestic and 20% of international) agreed or strongly agreed that an in-class presentation was not required. In addition, students were surveyed as to whether they had prior experience with an on-line course which may indicate whether a student viewed on-line learning favourably, for which VSC modules may be an effective tool. Approximately 25% of both domestic and international students had prior experience with on-line learning; however, it had no explanatory power in terms of the perceived need for in-class instruction.

The international student response was significantly greater, however, even after controlling for the greater reported use of the modules, on the part of international students. A potential explanation for this difference is the difficulty an international student may encounter in comprehending material during an in-class presentation. This may result in face-to-face instruction being of lesser value for the international student. Regardless, the overall results show that the majority of domestic and international students prefer additional in-class instruction.

Primary Learning Styles

As previously indicated, the survey instrument used by Cyr (2011) included a learning style inventory designed to measure which of Gardner's nine learning styles a student exhibited. The general level of response to elements of the survey varied across students, with some indicating a relatively high affinity across all nine learning styles, while others indicated a generally low level of response. Consequently, student's responses were converted to a relative measure, in terms of a student's average response rate across all nine learning styles. Students were then categorized in terms of the relative primary learning style they exhibited. In a few cases, participants indicated relatively equal affinity to more than one learning style. In such instances, the student was categorized as one of the major learning styles of logical, visual, kinaesthetic or linguistic, based on supporting information from the student's secondary learning style.

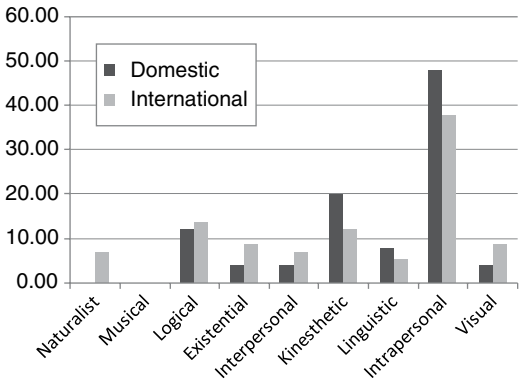

Fig. 2.2 Probability distribution of primary intelligences among domestic and international students

Figure 2.2 provides a graph of the relative frequency of primary learning styles exhibited by both domestic and international students. As indicated, the most frequent primary learning style, among both groups, was that of intrapersonal. Only a few international students were characterized as having a naturalist learning style, and no students, domestic or international, exhibited a primarily musical learning style. Given the similarity of the relative distributions of primary learning styles, the data from the two groups was combined for further analysis.

Table 2.4 provides the average responses of all students, categorized by primary learning style, with respect to their reported use and their perception of the effectiveness of the VSC modules. In addition, the average performance of students of each primary learning style on the final comprehensive examination is provided, along with the average results in terms of a final exam question that dealt directly with material relating to the modules. The scores assigned on the directly related question were based on a 1-to-5 rubric scoring of the students' apparent understanding and ability to use the concept correctly. The rubric scoring was then scaled to match the overall average of the comprehensive examination.

Table 2.4 indicates that although visual learners reported the least use of the modules, and perception of usefulness, they had the highest average score (90%) in terms of the directly related examination question. They ranked fourth among the learning styles, however, in terms of their average score (79.33%) on the comprehensive examination. Consequently, they exhibited the greatest difference in terms of their superior performance on the related question, compared to their overall performance. The existentialist and kinaesthetic learners also exhibited relatively high performance on the directly related question (87% in both cases), with the existentialist learners, like that of the visual learners, exhibiting high relative performance compared to their comprehensive exam score (77%). Existentialist and kinaesthetic learners also tended to report lower use of the modules and perceived them to be of lesser value than did students exhibiting other learning styles. It would appear that in general, visual, kinaesthetic and perhaps existentialist learners derive the least benefit from the VSC modules.

Table 2.4 Average use, perceived usefulness and test scores by primary learning style

Intelligence and number of survey participants		Naturalist (4)	Logical (11)	Existentialist (6)	Interpersonal (5)	Kinaesthetic (12)	Linguistic (5)	Intrapersonal (34)	Visual (6)
Present value of growing annuity	Played >1 (0 or 1)	0.71	0.64	0.83	0.80	0.67	1.00	0.65	0.50
	Stop or replay portion (0 or 1)	0.86	0.64	0.50	0.80	0.67	0.80	0.71	0.50
	Usefulness (1–5)	3.43	3.64	3.83	4.20	3.50	3.60	3.85	3.33
	Higher grade (1–5)	4.00	3.82	3.67	4.40	3.42	4.00	3.68	3.67
Two-stage dividend growth model	Played >1 (0 or 1)	0.71	0.82	0.67	1.00	0.50	1.00	0.62	0.50
	Stop or replay portion (0 or 1)	0.86	0.82	0.67	0.80	0.67	0.80	0.59	0.50
	Usefulness (1–5)	3.57	3.82	3.67	4.00	3.33	4.20	3.85	3.50
	Higher grade (1–5)	3.86	3.82	3.67	4.00	3.42	3.80	3.74	3.50
	In-class not required	2.71	2.45	1.83	2.40	2.50	2.60	1.85	2.83
Performance	Related question	60	82	87	72	87	72	82	90
	Final exam (comprehensive)	78.00	78.55	77.00	67.20	82.08	85.80	86.62	79.33

Table 2.5 Responses to questions as to whether the VSC modules were played more than once or a portion of the module stopped and replayed

Learning style	Yes	No	Percent yes	Yates' chi-squared statistic	*p* value
Naturalist	12	4	.75	0.148	0.6995
Logical	32	12	.73	0.392	0.5312
Existential	16	8	.67	0.019	0.8904
Interpersonal	17	3	.85	2.190	0.1389
Kinaesthetic	30	18	.73	0.395	0.5297
Linguistic	18	2	.90	3.890	0.0485*
Intrapersonal	87	49	.64	1.029	0.3104
Visual	12	12	.50	2.790	0.0948*
Total	224	108			

*Significant at the 10% level

In contrast, students with the lowest average performance in terms of the directly related question were those primarily identified with the naturalist (60%), interpersonal (72%) and linguistic (72%) learning styles. The scores of the naturalist and linguistic style learners on the directly related question were also lower than their scores on the comprehensive exam (78 and 85%, respectively). The interpersonal style learners exhibited the lowest average score (67%) on the comprehensive exam. These students (interpersonal and linguistic in particular), however, tended to report higher use and perceived value of the VSC modules.

Statistical Significance of Primary Learning Style

Testing the statistical significance of the above results is somewhat challenging, given the relatively low number of participants involved in the study and the number of attributes measured. Although several multivariate approaches such as factor analysis were attempted, the results were largely inconclusive. Instead, a contingency table approach was adopted to test whether the results obtained for any one primary learning style were statistically different than the remainder. This allowed for the grouping of data, a reduction in the number of attributes and consequently an increase in observations and resulting power in the test statistics.

Specifically, the responses by learning style to the questions of whether or not the modules were played more than once and/or a portion stopped and replayed were aggregated across both VSC module topics and reported in Table 2.5 below. In addition, the Yates' chi-squared statistic is reported whereby each learning style is tested for a significant difference in average response, compared to the aggregate of the remaining styles. The results indicate that the linguistic learners tended to exhibit a significantly higher reported use of the VSC module than others, while visual learners exhibited a significantly lower reported use.

In order to increase the power of the test for significant differences between the responses regarding the perceived value of the modules, the 1–5 scoring was

Table 2.6 Responses to questions as to whether the VSC modules were useful and whether they would be of value in achieving a higher grade

Learning style	Yes	No	Percent yes	Yates' chi-squared statistic	*p* value
Naturalist	11	5	.69	0.002	0.6943
Logical	29	15	.66	0.002	0.9643
Existential	17	7	.37	0.155	0.6938
Interpersonal	17	3	.85	2.847	0.0915*
Kinaesthetic	27	21	.56	1.49	0.2222
Linguistic	12	8	.60	0.061	0.8049
Intrapersonal	89	47	.65	0.015	0.9025
Visual	14	10	.58	0.245	0.6206
Total	216	116			

*Significant at the 10% level

converted to a yes/no response. A score of 4 or 5 (agree or strongly agree) on the part of a respondent was coded as a yes, and scores of 1 through 3 as a no. This aggregation of the cells, within a contingency table framework, provides for a more robust test of significance given the low number of observations in some of the 1 through 5 categorical responses. Combining cells into a yes/no categorization and ultimately a 2×8 contingency table, as opposed to a 5×8 contingency table, provided enough observations in each cell, to effectively test the broader yes/no question. Table 2.6 provides the results of aggregating the responses across both questions and for both VSC module topics, as well as the chi-squared statistic for the test of differences in response between a particular learning style and all others. The results in Table 2.6 indicate that only the interpersonal learners exhibited a significantly greater positive view as to the value of the modules.

Conclusion

The present study has attempted to ascertain the specific value of VSC modules for teaching financial mathematics concepts in an introductory MBA finance course – both in terms of their reported use and perceived value on the part of course participants, as well the participants' actual performance. The study was also carried out in the context of a domestic student class, as well as an international student class having a somewhat lower level of proficiency in the language of instruction. In addition, the influence of students' primary learning style on their average responses and performance was explored.

In general, the results, based upon the hypotheses examined (Hypotheses 1 and 2), indicate that while the reported use and perceived value of the modules were relatively high for both domestic and international students, international students exhibited significantly higher reported use. A possible reason for the difference is that VSC modules may be of particular value to international students in terms of comprehension. Although there was little support for the replacement of in-class

instruction with VSC modules (Hypothesis 3) on the part of either domestic or international students, a significantly greater proportion of international students indicated support for the concept. The responses were not statistically dependent upon prior experience with on-line courses or the extent of reported use. In general, the results appear to support Hypothesis 4, that an in-class exposition is of lower value for international students struggling with the language of instruction, and consequently the greater use of the VSC modules on their part.

The results with respect to learning styles (Hypotheses 5 and 6) are somewhat perplexing and indicate the need for further research. In general, linguistic learners report a significantly higher usage of the modules compared to other learning styles, while interpersonal learners reported a significantly higher perceived value. The opposite was true for visual and kinaesthetic learners, although the average performance of the visual and kinaesthetic learners with respect to related test material was the highest of all the learning styles. Conversely, the linguistic and interpersonal learners were among the lowest.

The greater reported use and perceived usefulness on the part of verbally oriented learners (linguistic and interpersonal) indicate that perhaps the main contribution of VSC modules is in terms of the recorded voice-over that accompanies the video and is of particular value for learners who may typically struggle with mathematical material. In addition, the results with respect to international student cohort (Hypothesis 4) also points to the importance of the accompanying voice-over aspect of VSC modules This is an important result that perhaps explains the apparent success of such on-line VSC modules as those provided on the *Khan Academy* website.

The results of the study are preliminary, however. Although learning styles have attempted to be addressed, several other factors have not been controlled for in the study, such as metacognitive (critical thinking) abilities (Tempelaar 2006), motivation and goal orientation (Grant and Dweck 2003) as well as attitude towards the subject (Tempelaar 2008). Including metacognitive, goal and attitude inventories in the survey design would however require a much larger sample, given the increased number of variables. The obvious lack of a control group also casts doubt on any interpretation of relative performance on actual test material. Finally, many inventories of learning styles exist in the literature, particularly with respect to Gardner's multiple intelligences. The inventory employed in the current study was chosen for its relatively succinct size; however, assessment of the accuracy of various learning style inventories requires further study. In addition, cultural differences and language barriers may also impact the effectiveness of such inventories when international students are among the survey participants as in the current study.

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Chapter 3
The Crucial Role of the Supervisor in Supporting Employees' Use of a Personal Development Plan: An Exploratory Intervention Study

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Introduction

In our current society, fast-developing and competing companies are confronted with challenges of global competitions and social change. Organizations need to incorporate technological advances and changes in work design, while they are confronted with an aging population. In order to keep competing, companies need to gain competitive advantages by attracting and integrating new highly skilled workers and developing, motivating, and retaining the current workers. This concern is believed to drive business success and has put the continuing professional development of employees high on the strategic agenda of many organizations (McKinsey & Company 2005; Noe et al. 2008). Professional development can be enhanced by organizing off-the-job training programs or courses or increasingly by stimulating formal and informal learning activities in the workplace (e.g., learning-by-doing, coaching, team learning) (Bartram and Roe 2008). Next, among the various interventions implemented to support the professional development of employees, PDP assessment, often embedded in annual assessment cycles, is gaining popularity. For example, within the context of talent management is 89% of the companies in Limburg, the Netherlands, using PDPs (GITP 2008).

"Using a personal development plan (PDP) leads towards nothing. It is frustrating and not motivating. Against my will, I fill in the form every year again. Why are they torturing us with this tool? It's not that I do not know what to do with my time.

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P. Van den Bossche et al. (eds.), *Facilitating Learning in the 21st Century: Leading through Technology, Diversity and Authenticity*, Advances in Business Education and Training 5, DOI 10.1007/978-94-007-6137-7_3,

Furthermore, my supervisor is not at all occupied with my development." This is one example of a common perception of personal development plans (PDPs). Therefore, the question that arises is as follows: Why do employees perceive the tool as ineffective, as is illustrated by the example given? While support for the positive effect of using personal development plans can be found in the literature (Beausaert et al. 2011a), employees often do not perceive the positive outcomes the same way as literature suggests. What are the organizations doing wrong? Is the tool poorly or inadequately implemented? Are sufficient supporting process conditions present, like the presence of a supporting supervisor?

In this study, we will focus on the role of the supervisor in supporting the employee's use of a personal development plan. Previous research indicated that especially three conditions are crucial when using a PDP: the learning and reflection of the employee, the instruction and feedback given by the supervisor, and the way the supervisor motivates the employees (Beausaert et al. 2011b). It was hypothesized that when supervisors would be trained in supporting the PDP use, the PDP practice, defined as the three central supporting conditions, would improve. Therefore, an intervention study, with a pre- and a post-measure, was conducted. In the intervention, the supervisors were trained in conducting performance interviews in which the tool takes a central role. First, we define the role of the PDP within this context and focus on the different kinds of PDPs. Second, the supporting conditions inherent to the PDP practice are discussed. Finally, the goal of the study and the setup of the intervention are introduced.

A Personal Development Plan (PDP): What's in a Word?

Before personal development plans were increasingly implemented in organizational settings, a similar tool, called a portfolio, was used by photographers, painters, architects, and brokers (Lyons and Evans 1997; Mathers et al. 1999). Also, students in secondary and higher education have been using portfolios with the main purpose to support learning or to obtain a certificate (e.g., Driessen et al. 2007).

In general, a portfolio is a self-reflecting learning tool that documents a person's continuous acquisition of skills, knowledge and attitudes, or competencies (Dochy and McDowell 1997). It provides insight into past, current, and targeted levels of performance and stimulates the feedback provision in order to improve performance (Brown 1995; Tillema 1998; Tillema and Smith 2000). On the one hand, a portfolio is prospective as it gives a direction for continuous professional development and acquisition of competences. On the other hand, it is retrospective as it documents evidence of past performance and motivates the employee to reflect on it (Brown 1995).

Smith and Tillema (2003) distinguish four types of portfolio use, which can be described as follows:

- *The dossier portfolio*: mainly for selection purposes and required for entry into a profession or program. A record of achievement or a collection of work (e.g., a photographer's portfolio).

- *The training portfolio*: a fixed format which helps the person to collect evidence of acquired competencies during a training program. It contains a representative sample of the person's work.
- *The reflective portfolio*: like the dossier portfolio, also used for promotion and selection purposes but on a voluntary basis. It is personally collected evidence of growth and accomplishments, and it reveals best practices. Self-appraisal is important.
- *The personal development portfolio*: evidence of professional growth during a long-term process. It is voluntary and compiled for learning and development purposes. It stimulates the conversation with peers or colleagues and, consequently, the reflection on experiences and the refinement of one's growth.

The different types of portfolios can be situated along two dimensions. The first dimension indicates whether or not the portfolio is used for selection and promotion purposes or for learning and development. The second dimension indicates whether or not it is mandatory and forced upon the employee or voluntary. Smith and Tillema (1998, 2001) argue that when portfolio use is voluntary, it is less likely to be done, but it will lead to more professional development. On the contrary, mandatory use will lead to more frequent use but is more formal in nature and will lead to less professional development. Furthermore, research has shown that when employees are intrinsically motivated – performing a learning task for the sake of it, not for potential obtainment of extrinsic rewards or because of obligatory use – they will show a higher readiness for self-directed learning and the continuing development of knowledge and skills (Bauer and Mulder 2006).

A similar tool to the one which Smith and Tillema (2001) called the "personal development portfolio" was implemented in organizational settings as well and mostly called "a personal development plan" (PDP). The PDP is different from the personal development portfolio in the sense that it does not necessarily contain pieces of evidence and that it is used for both learning and development and selection and certification purposes. For example, it is possible that the supervisor decides on whether or not giving the employee a salary raise, based on the learning and development documented in his/her PDP. Other terms used in literature to highlight PDP assessment in the workplace are a portfolio, a (continuing professional) development plan, a logbook, or a personal professional profile. The tool is mostly used for documenting strengths and weaknesses in performance and pointing out potential discrepancies between standards and achieved performance. It provides the supervisor with a way to give nonthreatening feedback on the professional growth of employees and as a consequence stimulate the self-reflection and learning from previous experiences (Wade and Yarbrough 1996). It encourages employees to collect evidence of their development on a continuous basis because it gives them responsibility (Smith and Tillema 1998). Despite the differences between different types and uses of the tool, in general, a PDP can be described as an assessment tool that (Beausaert et al. 2011a):

- Gives an overview of the competencies the employee worked on in the past and which competencies the employee is planning to work on in the future and how

- Should be composed by the employee himself/herself, mostly in consultation with the supervisor
- Can be used as a basis/structure for interviews with the supervisor or coach (i.e., development interviews, progress interviews, and performance interviews) that provides the employee with feedback and stimulates the employee's reflection
- Serves as a decision-making tool, from planning an individual training program to assessing the suitability of a promotion

Although the features of a PDP indicate its potential relevance for organizations stimulating development of employees, the (sustained) use of it cannot be taken for granted. Research shows that employees see many disadvantages in using a PDP. First, it is perceived to be time-consuming, and the employees do not feel that filling out excessive paperwork is valued (Hrisos et al. 2008). Second, since the goals are often set for sustained professional development, a PDP is not seen as helpful in setting and achieving short-term professional goals, and it leaves immediate weaknesses undetected (Smith and Tillema 2001). Third, PDPs are used in assessment interviews, and more often than not, those interviews are linked to selection and promotion purposes (Smith and Tillema 2003). As a consequence, employees' self-protection and fear of underachieving may lead to the collection of unauthentic evidence and the construction of invalid PDPs (Smith and Tillema 1998, 2001). Finally, also the organization might be unwilling to implement and promote the use. Time spend on the PDP is not spend directly on job activities and could therefore be perceived as unproductive and costly by the management (e.g., Templer and Cawsey 1999).

Supporting Process Conditions

Using a PDP does not guarantee it will result in employees continuously working on their development. Moreover, it should be seen as an instrument that structures the undertaking of learning activities and guides the reflective conversations with the supervisor. In order to make the PDP practice effective in guiding and supporting the employee's development, several supporting process conditions are expected to be present. Inherent to how a PDP is characterized, the literature indicates three crucial process conditions: the learning and reflection of the employee, the information and feedback given by the supervisor, and the presence of a motivating supervisor (Beausaert et al. 2011b).

Learning and Reflection

There are individual characteristics which cause a difference in how employees use a PDP. In that sense, Austin and colleagues (2005, p. 181) speak of a personal development plan, respectively, a portfolio, as an instrument that requires "an idealized type of individual who knows how to self-reflect, is open to change, interested

in his own development and knows how to organize himself and his environment to support learning." The first element that is mentioned by the researchers, reflection, refers to a critical analysis of the PDP (McMullan et al. 2003; Seng and Seng 1996; Smith and Tillema 1998). More specific, reflection on previous experiences aims to intensify cognitive elaboration on those experiences, leading to necessary behavioral changes (Anseel et al. 2009). That process of learning can best be explained by referring to the learning cycle of Kolb (1984). Kolb puts experience central in the learning cycle. Learning occurs through "concrete experiences." Afterwards the learner reflects on what was experienced. By thinking about what happened, the learner is able to draw more general conclusions (abstraction) and build up concepts (conceptualization). Finally, the learner can use previous experiences and what was learned from those experiences as a basis for new active experimentation. Nevertheless, many intelligent, highly motivated, and responsible people do not take the time to reflect on their own behaviors (Sherman and Freas 2004). Therefore, a supervisor needs to stimulate a structured way of thinking, help employees to step back from experiences, and help them consider what they have learned from it (Seibert 1999). This deliberate reflection may take place during informal meetings or more formal assessment interviews, in which the PDP takes a central role.

It was found that confidentiality in committing experiences to paper and in the environment (Joyce 2005; Pitts et al. 1999), the employee's motivation (Bahrami et al. 1995), and the perceived feasibility, which indicates if one can produce the required information (Smith and Tillema 2003; Pearson and Heywood 2004), influences the use of a personal development plan. The last mentioned researchers also found that the personal development plan that gave opportunities for self-directed learning was regarded as more feasible than the other PDP types. Also, when the PDP is in line with the employee's learning needs and when there is a clear connection with the day-to-day practice, the perceived benefit will lead towards an increased enthusiasm and personal satisfaction, which stimulate the personal development (Austin et al. 2005; Bahrami et al. 1995; Bullock et al. 2007). In this case, the employee will show more willingness and will voluntarily spend time on the tool, although often less time is provided to work on the PDP (e.g., Seng and Seng 1996; Tisani 2008). If an employee works on his personal development plan in a voluntary way, the individual's professional development will be larger (Beck et al. 2005; Smith and Tillema 2001; Swallow et al. 2006). Nevertheless, the question remains what needs to be done with less motivated employees (Swallow et al. 2006). For example, Bunker and Leggett (2004) found that staff did not develop a personal development plan unless they were obliged to.

The Supervisor's Feedback

Using a PDP needs sufficient support. Support can be offered by a coach, a mentor, or, as in most cases, a supervisor. Below, we will discuss the way in which the supervisor provides support, motivates, and gives feedback. These factors can be influenced more easily than employee characteristics.

The supervisor's feedback is important for stimulating the continuing professional development of employees, because it contains information about the employees and/or about how others perceive and evaluate the employees' behavior (Ashford 1986; Ilgen et al. 1979). The feedback can serve different goals, from rewarding and motivating the employee to signaling the need for adaptation or change of the employee's thinking or behavior (Ashford 1986). This change could be necessary in light of the goals that employees are striving for and for improving their learning and job performance (Shute 2008). The effectiveness of the supervisor's feedback is determined by several characteristics: the quality, quantity, timing, and the kind of feedback; the feedback delivery; and the promotion of feedback-seeking behavior.

The Quality of the Feedback. Feedback should focus on the learning and performance of the employee and not on the employee as a person. In particular, negative feedback can be demotivating and has negative effects on the employee's sense of self-efficacy (Dweck 1988; Gibbs and Simpson 2004; Nicol and Macfarlane-Dick 2006). Self-efficacy can be defined as "People's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura 1986, p. 391) and is related to effort and persistence with the task or behavior (Gibbs and Simpson 2004). Furthermore, feedback should not place the employee in rank with his/her coworkers, which diverts attention from the actual task to the individual. It inhibits learning in employees who are performance goal orientated, meaning that they pay more attention to how they are doing in comparison with colleagues and look for ways to show off instead of performing for the sake of professional development (Shute 2008). Moreover, the quality of the feedback improves if there is a relationship between the feedback, the purpose of the behavior (goal attainment), and what counts as a successful attempt for attainment (Gibbs and Simpson 2004; Nicol and Macfarlane-Dick 2006). It needs to be clear why certain behavior is seen as either improving or inhibiting professional development, and employees should be able to link the feedback to their performance and to the supervisor's expectations. In other words, the feedback should be meaningful to the employee (Ilgen et al. 1979). Finally, feedback should be clear and aim at a specific behavior. It should not only indicate whether a behavior is right or wrong but also provide employees with ways to improve their behavior (Nicol and Macfarlane-Dick 2006). In contrast, feedback that is nonspecific tends to impede learning. It is viewed as useless or frustrating, induces uncertainty on how to respond to the feedback, and requires greater cognitive processing to understand the intended message. Both uncertainty and an increased cognitive load can lead to employees who are less motivated to respond to the feedback (Shute 2008).

The Quantity of the Feedback. On the one hand, feedback should be specific, clear, and provide enough new information and details to act upon. On the other hand, it should not be extensively given, because feedback that is too complex or too long is not attended to (Shute 2008). It reduces the employee's feeling of control over the task, which may negatively influence the employee's intrinsic motivation (Ilgen et al. 1979).

The Timing of the Feedback. Feedback that is provided regularly, soon after relatively small steps in performance, might be more useful to the employee and be

seen as more accurate (Gibbs and Simpson 2004; Ilgen et al. 1979; London and Sessa 2006; London and Smither 1999). Gibbs and Simpson (2004) found that when feedback is not received fast enough, the individual has moved on to new tasks or experiences. Consequently, the feedback is irrelevant for the present situation and does not improve the employee's performance. Therefore, frequent interaction with the supervisor is important. However, informal interaction with the supervisor might be limited, and therefore, it is necessary to make formal arrangements to discuss the employee's performance (Gibbs and Simpson 2004). Still, the recipient needs time to interpret the feedback and act upon it. Complex feedback might not benefit from frequent provision as it might be difficult to process, which takes time (Ilgen et al. 1979).

Feedback Delivery. The supervisor's success depends on his or her feedback delivery or capabilities to handle difficult situations and on the inherent demands of the feedback strategy (e.g., providing favorable feedback before unfavorable feedback or vice versa) (Lizzio et al. 2008). A more interactive feedback strategy, including a high degree of employee participation, asks for an additional investment of time and effort. Nevertheless, strategies that incorporate explicit invitations to reply or explain are considered to be most effective in reducing confusion among the employee, avoiding unexpressed disagreement (Lizzio et al. 2008), and supporting intrinsic motivation and consequently development (London and Smither 1999; Roberts 2003). Furthermore, taking the employee into consideration when providing feedback is shown to be positively related to the perceived atmosphere of the interview, the helpfulness of the feedback, the perception of fairness, the satisfaction with the feedback, and a sense of self-competence (London and Smither 1999; Roberts 2003; Steelman et al. 2004). The opportunity to be involved signals trust and confidence in employees' abilities to contribute to their own developmental process (London and Smither 1999; Roberts 2003). Research has shown that the greater the degree of control employees have over the goals set, the more their performance will improve (Ilgen et al. 1979). The supervisor's decisions on how to give feedback are not only guided by whether or not the strategy is likely to be perceived as effective by the employee but also by whether or not the strategy can be enacted comfortably, has little unintended negative consequences, and is easy to continue using as a strategy (Lizzio et al. 2008).

Communicating the Standards and Setting Goals. A supervisor helps employees in setting goals and communicates the standards against which the employee's performance is measured (Brutus et al. 1999). Research has shown that goals regulate employees' behavior by stimulating and maintaining effort and directing attention (Noe 1996).

The Motivating Supervisor

Former research has been elaborating on the role of the supervisor. Based on a comparison of different types of PDPs, Tillema (2001) concludes that the power of the PDP lies in the support it provides for stimulating professional development, more than the support for certification or selection purposes. In order to stimulate

the employee's professional development, the presence of an involved supervisor that provides sufficient support and leaves room for self-determination is crucial. Moreover, supervisors who leave room for autonomy do not monitor the employees' behavior too closely, involve employees when taking decisions, leave the employees the choice, are concerned for employees' feelings and needs, encourage them to voice their own concerns, and do not put too much pressure on their employees (London and Smither 1999). This in turn will lead to increased intrinsic motivation, as employees experience a sense of self-competence and feel they are controlling their own behavior (Deci and Ryan 2000; London et al. 1999; London and Smither 1999). For example, research found that dentists, who received help from a supervisor [tutor] in developing a PDP, undertook more learning activities (Bullock et al. 2007). Similarly, it was found that employees are more likely to engage in developmental activities such as training when they have supervisors who are supporting their employees' efforts (Noe and Wilk 1993). Therefore, a supervisor should be available and have sufficient contact with the employee (Wasylyshyn 2003). The lack of interaction with the supervisor is mostly due to time limitations, incompatible work schedules, and physical distance (Noe 1988). The contact with the supervisor can be established by arranging fixed meetings, for example.

In sum, it is expected that when the supervisor motivates the employee to use the PDP as a reflection tool and stimulates the employee's reflection by providing high-quality feedback, the employee will learn and develop in turn. This is in line with, for example, Smith and Tillema (1998, 2003), who demonstrated that using a PDP has positive effects on learners' performance through reflection.

Goal of the Study

Previous research has suggested that it is not the assessment design itself, that is, using personal development plans within an assessment cycle, but rather how it is implemented and supported that determines the learning effects (Segers et al. 2008). In this study, we will focus on the role of the supervisor in supporting the employee's use of a PDP. More specific, we will research the following tasks a supervisor should fulfill within the assessment process of using a PDP: stimulating the employee's learning and reflection, giving the employee instructions and feedback, and motivating and encouraging the employee. In sum, the following hypotheses are formulated:

- Hypothesis 1: If a supervisor is trained in conducting PDP interviews (experimental condition), the employee experiences the PDP more as a learning and reflection tool, in contrast to employees which have a supervisor who is not trained in conducting PDP interviews (control condition).
- Hypothesis 2: If a supervisor is trained in conducting PDP interviews (experimental condition), the employee will perceive improved information and feedback during the PDP interviews than employees who have a supervisor who is not trained in conducting the PDP interviews (control condition).

– Hypothesis 3: If a supervisor is trained in conducting PDP interviews (experimental condition), the employee will perceive their supervisor as motivating more than employees who have a supervisor who is not trained in conducting the PDP interviews (control condition).

The Participating Organization and Its Employees

Participants are employees of a governmental office in the area of Limburg, the Netherlands. The employees are working in 5 different offices. Although approximately 1,400 employees are working in the 5 different departments, the organization has high retention rates and very little external mobility. This has led to an average age of the employees of 49 years. This implies that in the following years, the organizations will encounter a large stream out. As a consequence, talent management and continuing professional development of the junior staff are high on the strategic agenda. Furthermore, as an effect of computerization, reorganizations are regularly implemented. This also increases the need for taking care of the continuing professional development of employees.

Most employees working in the organization annually undergo an assessment cycle. Formally, the assessment cycle consists of a performance interview, a development interview, and an appraisal interview with the supervisor. In that assessment process, the supervisor and the employee can make use of a PDP.

The PDP lines up the competencies the employee still needs to develop through evaluating his or her current strengths and weaknesses. In the PDP form, the following questions are central: "What are your weaknesses?" "What are your strengths?" "What do you want to accomplish?" "Which competencies do you still need to develop?" and "How do you want to develop those competences?" The answers to these questions can be used to nourish the dialogues with the supervisor, in which the supervisor will try to stimulate the employee's reflection on the PDP. The dialogue with the supervisor and the employee's reflection is crucial and forms the core of using a PDP.

Many supervisors believe they do not need a tool in order to have good conversations with their employees. Consequently, the tool is not strictly used by every supervisor. Most of the experienced supervisors develop their own way of conducting the interviews and using the instrument. As a consequence, a lot of variation exists in how the conversations are conducted and how the tools are used.

The Intervention

Theoretical Background

The intervention was developed taking in mind the classic four-level model of Kirkpatrick (Kirkpatrick and Kirkpatrick 2006). This model is a widely used approach to training evaluation in as well the corporate government as the academic

world. The basic idea is to take ten factors into account when planning and implementing an effective intervention: determining needs, setting objectives, determining subject content, selecting participants, determining the best schedule, selecting appropriate facilities and instructors, selecting and preparing audiovisual aids, and coordinating and evaluating the program.

The Program of the Intervention

The intervention consisted of two parts. Especially the second part of the intervention focused on improving the conditions within the PDP practice.

The training was given to the supervisors of three different governmental offices in Limburg, the Netherlands. The experimental supervisor group was divided in three smaller groups, according to the three different departments ($N = 9$, 12, and 14). Those supervisors were already familiar with each other, and interaction could be stimulated more easily in small groups. The three groups consisted of a mix of expert and novice supervisors. They were informed about the new PDP tool and trained in how to conduct the assessment meetings during a 4-h meeting. More specific, the purpose of the experimental intervention was to create a deliberate and guided practice in which the supervisors could develop their knowledge and skills in supervising the use of PDPs (Salas and Rosen 2010). The session started with a short introduction about the research and the research design by the researchers to provide the participants with contextual information. The main part of the session was in workshop format and guided by a skilled senior trainer. In the first part of the workshop, the participants shared their experiences as a supervisor with the assessment meetings in their organization. Therefore, the trainer divided the supervisors into subgroups and provided them with questions to structure the discussion. The following questions were discussed: How do you organize the assessment meetings? How do you perceive your role as supervisor during these meeting? What do you expect from the employee before, during, and after the assessment meeting? What are your experiences until now with these assessment meetings? What is your best tip for your colleagues to do related to these assessment meetings? What would you advice your colleagues to avoid to do? Afterwards, each subgroup provided the other subgroups with their tips of do's and don'ts for the assessment meetings. The focus was on the exchange of experiences and information. For example, the ownership of the PDP was discussed. The supervisors agreed that the employee should be the owner of the PDP and fill in the PDP him/herself. Another conclusion was that discussing the PDP should happen formally and not in between activities or at the coffee machine. It shows that the PDP practice is taking seriously by the supervisor.

The next step was an extended explanation of the new PDP format to be used in the governmental offices. The purpose, the procedure, the similarities, and the differences with the existing procedures and tools were explained.

The second part of the intervention consisted of a role play during which the same subgroups simulated an assessment meeting. During the role play, focus was on how questions and feedback were formulated and how those should be used to

stimulate employee's reflection. Furthermore, attention was paid to how the supervisor motivated the employee by involving him/her, providing choices, and listening and adopting to what the employee had to say.

Three roles were divided:

1. Supervisor. This is in fact the natural role of the participant.
2. Employee. The participant took one of his/her own employees in mind as case study. The supervisor and observer were informed about the position, the age, and years of working experience of this employee.
3. Observer. He/she was responsible for the time management and had to coordinate the reflection part after the role play.

Additionally, the supervisor and the observer received the instruction to give feedback in a systematic way by using the SCRIPT model. Research found a positive relation between giving systematic feedback on performance and the results of an organization (Greve 2003). If supervisors are familiar with the goals and the format of a feedback tool such as the PDP, this might improve the quality of the assessment meeting. Script is an acronym for:

*S*pecific: feedback must be based on observable behavior, not on one's feelings or the conclusions drawn from the behavior.
*C*oncrete: feedback concerns observable behavior and is presented in a descriptive and objective way.
*R*elevant: the feedback must be useful for the receiver.
*I*ntegrity: the feedback must be provided in a respectful and authentic way.
*P*ersonal: the feedback is related only to the perception of the feedback provider. The feedback is presented in the "I" form.
*T*imely: feedback should be given in time so that both parties can recall the specific behavior involved.

Also during the role play, the supervisor and the employee received the instruction to make appointments by using the SMART principle. The SMART principle is especially used in performance management. As Armstrong (2004, p. 1) states, "performance management is a strategic and integrated process that delivers sustained success to organizations by improving the performance of the people who work in them and developing the capabilities of individual contributors and teams."

SMART is an abbreviation for:

*S*pecific: only one interpretation is possible. It must be clear what should be done and who does what.
*M*easurable: indicate the criteria for the results.
*A*cceptable: the supervisor as well as the employee must accept the appointment.
*R*ealistic: the objective must be doable.
*T*ime: a clear timeline and deadline must be agreed upon.

By encouraging all participants to use the SCRIPT and SMART principle during the role play, each of the participants had the opportunity to practice, to observe how others apply the principles, and to reflect on the usefulness of the two principles.

At the end of the workshop, the role play was discussed. The supervisors indicated how it was to give feedback by making use of the SCRIPT and SMART principles. They concluded that they knew the principles but did not always use them. When they were forced to work with the principles, however, they experienced the principles as fruitful for formulating feedback and objectives. They also found it useful to exchange best practices on how to stimulate the employee's reflection and motivating him/her. Finally, each participant indicated how he/she was planning to handle assessment meetings in the future.

Method

Procedure

The governmental offices of Limburg were contacted and invited to participate in the research. After an introduction meeting aiming at explaining the study, a newly validated questionnaire (Beausaert et al. 2011c) was, in cooperation with an HR consultant, adapted to the specific setting of the organization. Finally, the questionnaire was distributed by the HR consultant via email, with a link to the questionnaire. To guarantee the anonymity of the employees, the data were immediately gathered by the software (NetQ). To higher the response rate, the employees received one reminders via a weekly newsletter.

Sample

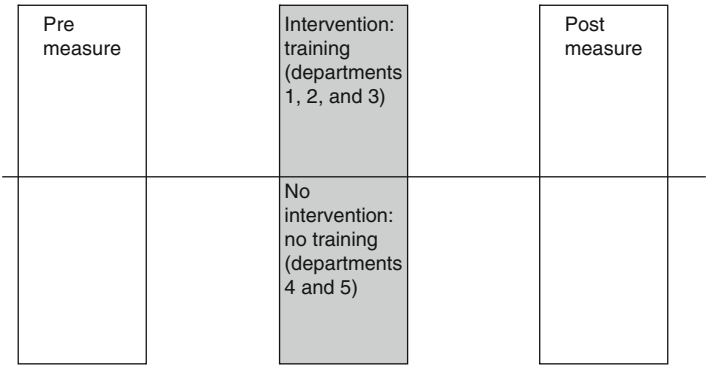
Out of the 1,400 employees that were contacted, a total of 287 (response rate 21%, 187 men and 72 female; 28 missing values) participated in the premeasurement, spread over at least 6 different departments and 4 office locations. Of the 259 employees who provided us with their highest education, 27 studied WO (university), 81 HBO (nonacademic higher education), 16 VWO (academically oriented secondary education), 47 HAVO (higher secondary education), 55 MBO (secondary vocational education), and 8 VMBO (lower secondary vocational education). The average employee was 49 years old (SD = 7). The average number of years of experience in the organization was 21 years (SD = 12), and the average number of years of experience in the current role was 10 years (SD = 9). These numbers are in line with the statistics that are available for the total group of employees.

In the post-measure, 165 employees were involved, of which 83 provided us with all the necessary information in order to categorize the employees and who did no switch supervisor or office during the last year. Because of reorganizations, many employees changed supervisors during the past year and therefore could not be included in this study.

Design

To measure the influence of the supervisor on the employee's use of the tool within the assessment cycle, a quasi-experimental design was set up. In this, design is differentiated between an experimental group and a control group. The experimental group contains a group of employees who is using the tools and of which the supervisors were introduced in using the tools and conducting the assessment meetings with their employees (offices 1, 2, and 3). The control group consists of employees who are also using the PDP and of which the supervisors did not have training in conducting the assessment meetings (offices 4 and 5).

In both conditions, we distinguished a premeasure and a post-measure. In the premeasure, the PDP practice (three supporting conditions) was evaluated. In the post-measure, we researched the same variables as in the premeasure, but 1 year later. The participants are compared on a group level.



Measure: Personal Development Plan Practice Questionnaire

The research was conducted by using questionnaires. The questionnaire consists of three sections. The first section collected demographic data, and the second section collected data on the organization of the assessment process. Section 3 asked for the employee's perception of the personal development plan practice and use, including the supporting conditions: learning and reflection, instruction and feedback, and the motivating supervisor. Except for the items concerning the implementation, all questions were answered making use of a 5-point Likert scale, anchored by totally agree and totally disagree.

For an overview of the different measures and their Cronbach's alphas, we refer to Table 3.1 and the paragraphs below.

The Supporting Conditions Within the PDP Practice. To measure the employee's perception of the PDP practice, we used the validated Personal Development Plan Practice Questionnaire (PPQ) (for the development and validation of the

Table 3.1 Overview of the different scales, an example item and their Cronbach's alphas

Scale	Measure	Example item	*N*	*α*
The PDP practice and its supporting conditions	PPQ (Beausaert et al. 2011a)			
Learning and reflection (P1)		I learn from the PDP	8	.89
Instruction and feedback (P2)		No matter what kind of feedback I am receiving, I receive it too late to be useful feedback	5	.70
The motivating supervisor (P3)		My supervisor leaves me enough space to determine the content of the PDP and the related meetings	4	.74

questionnaire, see: Beausaert et al. 2011c). The questionnaire consists of the following scales: learning and reflection (eight items, e.g., "I learn from the PDP"), instruction and feedback (five items, e.g., "No matter what kind of feedback I am receiving, I receive it too late to be useful feedback"), and the motivating supervisor (four items, e.g., "My supervisor leaves me enough space to determine the content of the PDP and the related meetings"). It was decided to measure the employee's *perception* of the personal development plan. After all, the 3P model (presage-process-product) for students' learning of Biggs (2003) and Prosser and Trigwell (1999), which is originally related to student learning, but is easily adaptable to an organizational setting, shows that the assessment practice influences the employee's learning outcomes via the employee's perception of that practice.

To assess the validity of the three PDP practice components, a Confirmatory Factor Analysis (CFA) was performed with the EQS 6.1 software. To interpret the model's fit, the following decision rules were used: RMSEA values should be as small as possible; an index of zero indicates a perfect fit (Browne and Cudeck 1992). Fit values smaller than 0.05 indicate good fit (Browne and Cudeck 1992). For CFI, the score above 0.90 suggests a good fit (Byrne 1998). Because the reliability of the χ^2 becomes increasingly unreliable by sample sizes<250 (Byrne 1998), the decision rule χ^2 divided by its degrees of freedom was used, where numbers below 5 indicate good model fit (Bollen 1989). The model showed a strong model fit (χ^2/df=1.99; SRMR=0.067; RMSEA=0.059; CFI=0.93). Cronbach's alphas were, respectively, .89, .77, and .74.

Data Analysis

Firstly, descriptive statistics (means and standard deviations) are compared for employees in the experimental condition and employees in the control condition. Secondly, because of the small samples and because not all variables were normally distributed, nonparametric tests (Mann–Whitney *U* test) were performed in order to detect significant differences between the two distinct groups concerning the three supporting conditions (learning and reflection, instruction and feedback, and motivating supervisor). Individuals are compared on a group level. An analysis of

Table 3.2 Descriptive statistics and Mann–Whitney *U* test for the experimental and control group during pre- and post-measure

	Control condition			Experimental condition			
Variable	*N*	*M*	SD	*N*	*M*	SD	
Premeasure							
Supporting conditions							
Learning and reflection	131	2.90	.79	128	2.68	.81	.03*
Instruction and feedback	131	3.14	.40	128	3.07	.44	.29
Motivating supervisor	131	3.47	.60	128	3.38	.73	.34
Post-measure							
Supporting conditions							
Learning and reflection	33	3.07	.64	50	3.02	.79	.95
Instruction and feedback	33	3.13	.53	50	3.17	.53	.65
Motivating supervisor	33	3.85	.50	50	3.71	.67	.64

*p < .05

variance indicated no differences in employees' background characteristics (age, education, and experience) between the control and the experimental condition.

Results

Table 3.2 illustrates the descriptives (means and standard deviations) and nonparametric tests for the PDP practice conditions (learning and reflection, instruction and feedback, and motivating supervisor). The results indicate no significant differences between the two conditions in the post-measure (experimental condition; control condition) concerning all variables measured: learning and reflection, instruction and feedback, and motivating supervisor. However, taking into account the premeasure, a significant difference between the control and the experimental group is found for learning and reflection. Moreover, the control group scores significantly higher on learning and reflection because of using a PDP, while that difference is not present anymore in the post-measure. It looks like the training made the difference between both conditions disappear. In other words, the results suggest that employees of which the supervisor was trained in conducting performance interviews and supporting the use of a PDP showed more learning and reflection because of using a PDP. This is partly in line with hypothesis 1. In contrast, hypothesis 2 was not confirmed (Fig. 3.1).

Discussion

While fast-developing organizations are confronted with an aging population, companies come to realize that the employee's continuing professional development drives business success. In order to gain competitive advantage, attracting and

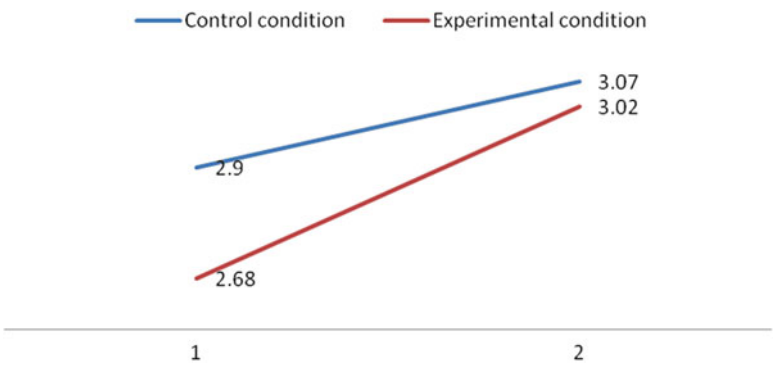


Fig. 3.1 Means of learning and reflection for both conditions, before and after the intervention

integrating new highly skilled workers and developing, motivating, and retaining the current workers have become crucial (Noe et al. 2008). To support the professional development of their employees, organizations start implementing the use of personal development plans (PDP).

This study focused on the central role of the supervisor within the assessment process of using a personal development plan (PDP) as an employee. To research the supervisor's role within the assessment process, an intervention study was conducted in a governmental office in Limburg, the Netherlands. While supervisors of an experimental group were introduced into a new PDP format and were trained in how to support employees while using a PDP and how to conduct assessment meetings with their employees, a control group did not receive training.

As hypothesized, the findings seem to suggest that employees, of which the supervisor was trained in conducting performance interviews and supporting the use of PDPs, learn and reflect more. While we researched the PDP practice in an organizational context, our results are in line with previous research conducted within a school setting (students). Tillema (2001) stated: "Putting PDPs [portfolios] to use essentially means setting the goals for learning and reflection first." The supervisor can motivate the employee in this by creating a learning environment where the learner takes control over his/her learning. The supervisor communicates the goals of the use of the tool, introduces in which way it should be used, supports and motivates the employee, has meetings with the employee on a regular basis, is autonomy supportive, takes care of the follow-up, and gives high-quality feedback. Tillema (2001) found reflective portfolios, focusing on documenting professional growth and determining learning goals, to be effective for supporting learning and a better performance. Furthermore, Tigelaar and colleagues (2006) found a positive relation between using a PDP and reflection in teachers. However, the research showed that this reflection is often not very profound and teachers do not easily reflect on their motivation, feelings, thoughts, and their personality. The support of a coach, colleague, or supervisor who stimulates the reflection is necessary, for example, during a formal professional development meeting every 6 months.

In contrast, while the supervisors were also trained in giving instructions and feedback and motivating the employee, the employees did not perceive their supervisor as giving better instructions and feedback or supporting them better. This can be explained by the fact that it concerned a training of only one and a half day. Follow-up training would probably have led to visible effects. Furthermore, various explanations for these non-expected findings are explored in literature, for example, in studies on the effects of 360° feedback. The study of London and Smither (1995) showed that the characteristics of the feedback recipients (attitudes, personality, or self-efficacy) influence how the one that receives the feedback reacts to and uses it. Furthermore, the different governmental offices went through much reorganization. More specifically, technology and reorganizing of process led to a lot of internal mobility. Therefore, the offices started paying more attention to the development of their employees. Finally, the employees performed significantly better than 1 year ago, but this was also the case for the employees in the control group. It is possible that because of introducing the research within the whole company and dialogue between supervisors of different offices, all supervisors were influenced.

Limitations and Suggestions for Future Research

Some limitations need to be taken into account by future research. First, the response rate was 21% for the premeasure and only 12% for the post-measure. It may be possible that the group of employees who did not answer the questionnaire created a selective dropout. For example, it is possible that employees, who are not motivated to use a PDP, did not fill in the questionnaire. Furthermore, because of reorganizations, only a small group of employees is still involved in both conditions of the post-measurement ($N=50$ and 33) which makes it harder to generalize the results from this study to the total population. Finally, because of the reorganizations, we were only able to compare group means. It was not longer possible to link questionnaires in the pre- and post-measure. Therefore, statistical techniques, controlling for the premeasure, were not possible, which should be taken into account by future research.

Second, it is not clear how the results can be generalized. The study was conducted within one organization. In what way the results can be generalized to other organizational settings was not researched. Supporting conditions and effects may differ according to the format used, organizational learning culture (Marsick and Watkins 2003), sectors or disciplines (e.g., Datta et al. 2005), type of organizations (market oriented or not; Baker and Sinkula 1999), type of employees and supervisors (e.g., experienced versus non-experienced or employees who are motivated to learn versus those who are not), and organization sizes (small versus large scale; Saru 2007). Often larger organizations show a more sophisticated human resource management (Guthrie 2001) in which the PDP practice is well established and organized. For deepening our understanding of how the PDP practice differs between supervisors and organizations or when using different formats, we recommend the additional use of qualitative research methods such as interviews.

Third, the organization indicated that the tool is used for both learning/development and certification/selection purposes. The question is if using a PDP for both purposes might have influenced employees' reactions. Research indicated that in case of using a PDP for selection purposes, employees' self-protection and fear of underachieving may lead to the collection of unauthentic evidence and the construction of invalid PDPs (Smith and Tillema 1998, 2001). This in turn might jeopardize the employees' reactions to a PDP in that sense that he/she does not use the PDP as a tool for his/her professional development. Research on assessment argued that formative (learning/development purposes) and summative assessment (certification/selection purposes) should not be combined and conducted by the same supervisor (e.g., Wolf and Dietz 1998). Therefore, we suggest for follow-up research to take into account the nature of the purposes of the PDP as perceived by the employee, as well as how this influences the PDP's effectiveness.

Fourth, since it has been demonstrated that assessment practices have an impact on learning results by influencing employees' perception (Biggs 2003), we believe questioning the employees' perception is the best way to measure the PDP practice. However, for those interested in researching employees' behavior in terms of PDP use, it would be advisable to involve multi-raters and, for example, question supervisors as well.

Practical Implications

The study indicated that by training supervisors in conducting performance interviews and supporting the use of PDPs within those interviews, employees perceive they learn and reflect more because of using a PDP. In case HRM wants their employees to learn and reflect more, they should set up trainings like described in this study. In those trainings, supervisors are brought together to introduce them to the underlying theory of the assessment cycles and the related tools. It is only when the supervisors are aware of the underlying theory and the assumptions that it makes that they will be able to make them explicit to their employees. Next, participating in collective training will give them the opportunity to learn from each other. By making the supervisors talk about how they introduce the PDP to their employees and how they conduct the performance meetings, they will become aware of good and bad ways of handling this. Consequently, the assessment process and the use of PDPs as part of the continuing process of performance evaluations will be more effective. However, we expect that if the training given, as discussed in this study, would be extended by follow-up training, even better results could be achieved.

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Part II
Group Learning

Chapter 4
Bringing Virtual Teams and Cross-Cultural Business Education into the Classroom

Rémy Magnier-Watanabe, Caroline Benton, Harald Herrig, and Olivier Aba

Introduction

Globalization has been defined as "global competition characterized by networks of international linkages that bind countries, institutions, and people in an interdependent global economy" (Deresky 2008, p. 4). New market opportunities and access to lower-cost labor, to technical expertise, and to production inputs have prompted organizations to set up offices abroad and to strengthen their relations with foreign partners. That phenomenon demands that companies learn to deal with an ever more multicultural environment in which they must compete, and would-be international managers must develop the right skills and gain relevant experience. In particular, globalization has spurred the use of global virtual teams (Kozlowski and Ilgen 2006; Dekker et al. 2008) especially among geographically distributed global firms, thus raising additional organizational, technical, cross-cultural, and management issues.

Learning to cope with the demands of globalization should preferably start before actually working in such international environment, in order to build capacity and allow the learning curve to reach an advanced phase. Institutions of higher

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P. Van den Bossche et al. (eds.), *Facilitating Learning in the 21st Century: Leading through Technology, Diversity and Authenticity*, Advances in Business Education and Training 5, DOI 10.1007/978-94-007-6137-7_4,

education can provide such learning opportunity, and many of them have indeed adapted their curricula to this new demand. This need for global business education is also visible from an accreditation viewpoint, as Groeppel-Klein et al. (2010) report that "AACSB accreditation standards require business schools to cover global issues within both undergraduate and MBA curricula" (AACSB 2007, p. 253).

However, the challenges of culturally diverse virtual team work cannot be easily learned without hands-on experience, and educational institutions must find new ways to provide effective courses on this emerging work setting of the global economy. The recent financial crisis has been holding back many of those who formerly considered studying or working overseas to learn cross-cultural management firsthand. The chairman of the Japan Business Federation (Nippon Keidanren), Hiromasa Yonekura, lately expressed concern over young Japanese people's inward-looking mind-sets and tendency to shy away from gaining experience abroad, pointing out that because of its limited resources, Japan's success builds upon technology and international trade (Daily Yomiuri 2011). In the context of multinational corporations, Zaheer (1995) remarked that unfamiliar environments, cultural differences, and distances contributed to the "liability of foreignness." In order to decrease that liability of foreignness, Goodall and Roberts (2003) suggested "bringing foreignness inside the boundaries of the firm" (p. 150).

For an optimal link with practice, cross-cultural awareness should be started during management education for which blended learning has proved to be very useful. Education on cross-cultural management and virtual teams can bring foreignness into the classroom using blended learning. Hicks et al. (2001), for instance, recommended that universities "provide for a larger and more diverse cross-section of the population, cater for emerging patterns on educational involvement which facilitate lifelong learning and include technology-based practices in the curriculum" (p. 143). Today, most institutions are implementing distance learning at some level, ranging from merely offering classroom contents online to providing a full platform for student-instructor and student-student interactions similar to those found in a traditional classroom (Martins and Kellermanns 2004).

Section "Literature Review" describes the theoretical foundation, and section "Methodology" presents the methodology of this study. Section "Evolution of the Course" explains the evolution of the MBA course jointly taught in Japan and France over the past 3 years, and it is then followed by a discussion of the results in section "Discussion". The last section presents the conclusion.

Literature Review

Blended Learning in the Classroom

Blended learning has been proposed as a method to combine different modes of delivery and approaches to learning such as face-to-face classroom instruction and e-learning tools (Procter 2003, p. 3; Akkoyunlu and Yılmaz-Soylu 2008). For example, instructors integrate synchronous lectures in a traditional classroom setting

with information technology tools such as course-management systems (CMS), videoconferencing, and on-demand learning systems through which students can access educational materials and instruction asynchronously.

Clouse and Evans (2003) have shown that such technology-mediated instruction using both synchronous and asynchronous methods for lectures and discussions can guide the learning process. They found that synchronous methods allow for interactive instructions and immediate feedback and for building on the social aspect of learning, while asynchronous communication provides students with an opportunity to reflect and further polish their answers. In other words, blended learning allows for both in-depth learning through discussion and real-time interaction between faculty and students and individual contemplation on subject matters.

Furthermore, blended learning allows institutions of higher education to address the needs of our increasingly complex and interdependent society of the twenty-first century in a practical and efficient manner. With growing demand for continuing education, universities must make education more accessible to working professionals. The use of online learning tools enables these students to more efficiently balance their professional and student lives by providing asynchronous administration of educational materials and instruction. Universities are also increasingly expected to equip students with the tools necessary to navigate the global business environment (Groeppel-Klein et al. 2010). However, international exchange programs that rely only on the physical exchange of students are prohibitive in terms of time and cost, allowing for participation of only a few select fortunate students. In contrast, the use of information technology tools such as videoconferencing and e-learning platforms within a traditional classroom setting enables students to meet and learn from instructors and students around the world without traveling abroad.

Garrison and Kanuka (2004) contend that "blended learning is both simple and complex" (p. 96). The integration of classroom face-to-face learning experiences with online learning experiences appears intuitively appealing. At the same time, however, the unlimited possibilities in blending synchronous and asynchronous learning activities make successful implementations challenging, especially if it is done across cultures. Primary issues include developing cooperative relationships with partner organizations based on mutual shared goals, managing time differences, developing instructors' skills in using e-learning tools, and motivating students' usage of e-learning tools remotely. This chapter addresses methods of overcoming these difficulties through a study of a blended-learning course created and delivered jointly by the University of Tsukuba and the Grenoble Ecole de Management.

Cross-Cultural Theories

In today's global society of fading borders and interdependent economies, managers must be able to navigate the diverse environment of the global marketplace. The ability to understand and manage cross-cultural contexts is essential for success. However, much of the field of cross-cultural education has yet to catch up with the globalization of society and has failed to offer more advanced solutions that can help build true cross-cultural understanding.

Traditionally, cultural theories have provided analytical frameworks based on differentiating and stable, value-based conceptualization of culture (e.g., Leung et al. 2005; Earley 2006). The most well-known and most used theories among these are Geert Hofstede's five dimensions and Trompenaars and Hampden-Turner's seven dimensions of culture (Hofstede 1994, 2001; Trompenaars and Hampden-Turner 2000). Although these frameworks are useful tools as an initial primer into a foreign culture, in today's global society characterized by exponentially increasing change and interdependence, a new perspective on cross-cultural theory that offers dynamic insights into how cultures evolve, individual and situational variance in expression of cultural values, and more importantly, the development of cross-cultural adaptability competencies is necessary. The focus is thus on context, appropriate behavior, and developing cultural hypotheses and explanations for paradoxical behavior. Such concrete practicalities are bound to be more useful to global business managers as they try to make sense of the subtle complexities they face while doing business across borders.

There are two methods for learning cultural understanding: didactic and experiential. Didactic learning refers to the traditional style of learning where the instructors offer his/her knowledge in a lecture format, whereas experiential learning is the process of learning by doing (Kolb and Fry 1975). This course integrated both types of learning styles through lectures and interactive discussions among an international group of faculty and students and through group work involving cross-cultural teams. The authors propose that true understanding of the complexities and nuances of cultures must be directly experienced. This is consistent with a recent review of the literature on cross-cultural training which found that training programs for managers and stakeholders in international projects should address all the three major areas that affect success, namely, developing individual and interpersonal skills, addressing organizational issues (e.g., governance, scheduling, and financing), and attending to environmental issues (e.g., political and socioeconomic constraints) (Kealey et al. 2005). Through cross-cultural interactions, students are able to discern the tacit differences among cultures and individuals and make and test hypotheses regarding cultural awareness and appropriateness of behavior through direct feedback. Similarly, Harrison (1992), using civilian employees of the US military to be sent abroad, found that cognitively based cultural assimilator and behavior modeling lead to more successful cross-cultural management.

Virtual Teams

The theme of this year's course was "cross-cultural management and distributed teams" to reflect the ubiquity of remote/virtual teams in the workplace. Increasingly, managers find that they must work with colleagues and partners who are remotely located (Meyer 2010).

A team is defined as "a small number of people with complementary skills who are committed to a common purpose, set of performance goals, and approach for

which they hold themselves mutually accountable" (Katzenbach and Smith 1993, p. 112). A remote team can be defined as a team which uses information and communication technologies to collaborate at a distance. In contrast to colocated teams, the physical and psychological distance in remote teams adds another layer of complexity as members are frequently required to work with persons whom they have never met, which makes building trust and establishing shared vision, both essential for effective teamwork (Katzenbach and Smith 1992), difficult. By extension, virtual teams are remote teams which purposefully use technology to work as one, and they have been defined as "groups of people with a common purpose, who carry out interdependent tasks across locations and time, using technology to communicate much more than they use face-to-face meetings" (Webber and Cramton 2005, p. 758).

Aubert and Kelsey (2003) found that the "perceived ability, integrity, and benevolence of remote teammates were significantly lower than the ratings of local teammates and that this gap increased as the projects proceeded. Trust was also higher among local teammates than among the remote partners" (p. 605). Furthermore, the researchers found that "information symmetry and good communication distinguish high performance teams from low performance teams" (p. 575). These findings suggest that developing effective virtual teams requires extraordinary leadership, information management, and communication skills.

Out of the many problems encountered by virtual teams, Rusman et al. (2010) have noted the five following issues: asynchronous communication, information bits preventing collaborative knowledge construction, sporadic interactions, personal conflicts, performance hampered by decision-making processes. Rusman and colleagues (2010) and group have subsequently traced the formation of interpersonal trust in virtual teams to the assessment of trustworthiness, with antecedents including communality, ability, benevolence, internalized norms, and accountability, which are all directly perceived as a result of collaborative work. Communality derives from personal characteristics, even trivial ones like personal interests, shared among two members. Ability is related to knowledge, competence, and skills used to perform specific tasks. Benevolence originates from the willingness to help, availability, sharing, faith in intentions, receptivity, kindness, openness, caring, and commitment. Internalized norms, directed towards others in general, include integrity, discretion, honesty, fairness, and loyalty. Last, accountability stems from reliability, consistency, self-confidence, persistence, and responsibility (Rusman et al. 2010). These issues are all compounded when virtual teams are made up of members from diverse national cultures. Because culture can be understood as a system of common symbols and meanings (Alvesson 2002), it provides "the shared rules governing cognitive and affective aspects of membership in an organization, and the means whereby they are shaped and expressed" (Kunda 1992, p. 8). However, these antecedents of trustworthiness are neither uniform nor uniformly expressed among dissimilar cultures, and they are likely to be affected by different values, assumptions, expectations, and rules, making trust building even more elusive.

Additionally, best practices have already been drawn to improve virtual teams. For instance, Wardell (1998) proposed that managers pay attention to the following

eight key lessons: learn to manage local teams first before moving up to virtual ones, provide a clear mission, never assume anything and spell things out of the team members, communicate continuously, forge alliances with team members, base incentives on project and personal performance, expect and manage conflict, and learn from past mistakes.

Methodology

The University of Tsukuba's MBA Program in International Business (MBA-IB) in Tokyo, Japan, and the Grenoble Ecole de Management (GEM)'s Master in Management Program in Grenoble, France, have developed a joint course on cross-cultural issues in global business taught in English using a videoconferencing system connecting the two campuses. On the Tsukuba side, the MBA program is more akin to an executive program in which all students work full-time and take classes in English at night and on weekends, whereas on the Grenoble side, Master students study full-time both in French and English and have no work experience besides a few business-related internships.

This course was originally developed to stay a step ahead of the increasing pressure of globalization and diversity in both education and business. Because Tsukuba students who work full-time cannot easily take time off to attend courses at partner institutions, and because of a relatively low number of foreign students in the MBA program, this course was deemed essential to provide students with the opportunity to experience cross-cultural management. This course also gave the younger Grenoble students the chance to learn working in virtual teams, which they would likely be subject to in their professional career. Thus, by using already-installed technology at both institutions, namely, videoconference and course-management systems, the two parties decided to create a joint blended-learning course conducted live focusing on solving the challenges of an international and interdependent business environment in which people from various nations and cultures must work together.

Over the course of 10 weeks, students work in mixed and geographically distributed virtual teams on various exercises and case studies dealing with issues specific to cross-cultural management and virtual teams. Two faculty exchanges take place, with a Tsukuba faculty member lecturing from Grenoble alongside a French colleague and a Grenoble faculty member partner with a Tsukuba colleague instructing from Tokyo for two sessions at a time. In addition, a guest speaker is invited in the middle of the course to share his experience on the topic of the course. This elective course has adopted a blended-learning approach whereby synchronous face-to-face lectures and discussions in the classroom are complemented by asynchronous exchanges through a course-management system as well as student interactions within their groups using a variety of technology-mediated tools.

The four faculty members in charge of this joint course since the beginning gathered both qualitative and quantitative data using students' written assignments and

questionnaires, respectively, to evaluate the course and make necessary adjustments year on year. In particular, assignments on their learning experience under this particular course format and a survey on the perceived benefits of students and instructors diversity and of faculty exchange, on group work, course-management system, and videoconferencing provided the basis for improving this novel course setup (Magnier-Watanabe et al. 2011).

Evolution of the Course

The course, first offered in 2009, was successively improved in response to the four faculty members' "on-the-job-learning" while jointly teaching cross-cultural management to students from Tsukuba and Grenoble (Table 4.1).

The 2009 Pilot Project

In 2009, following two program directors' call for developing an academic partnership, a faculty team of four professors from Tsukuba MBA-IB and GEM set out to design a joint course for students from either institution. Considering the geographical distance and differing time zones, it became obvious early on that the course design needed to be technology-mediated. On the content side, it was assumed that respective countries' specificities as national economy, technology-based industrial activity, and cultural managerial practices were to constitute a meaningful as well as motivating body of themes, relating to participating student groups' life experience and career projections.

The novelty of the entire approach led the faculty team to keep an extremely open outlook, conferring a trial nature to the overall project. One institution already had Moodle as a course-management system: it provided the possibility to log in students from the partnering institution and thus became the pivotal hinge for depositing and downloading course materials, profiles, instructional messages, and other course-related comments.

Pedagogically, a mix of didactic learning and experiential learning was projected, with the intention to re-create a common learning environment over distance and time zones with the help of a videoconferencing system connecting the two sites of Tokyo and Grenoble. This led to an alternate course structure, with the pilot course taught over five 2.5-h sessions over 5 weeks preceded by an information session on either side, where presentations by faculty producing knowledge transfer, in-class exercises in view of assimilation, and student group presentations relayed each other.

In terms of knowledge transfer, presentations combining faculty's knowledge of national economies and industrial relations, as well as analytical models of culture (Hall 1976, 1990; Hofstede 1994, 2001; Trompenaars and Hampden-Turner 2000),

Table 4.1 Evolution of the course over the past 3 years

	2009	2010	2011
Location	Tokyo and Grenoble		
Students	Maximum 10 from each institution		
Central topic	Cross-cultural management		
Additional topics	Leadership	Innovation, international joint ventures, knowledge management	International joint ventures, global virtual teams
Focus	France, Japan	Global	Global
Sessions	5	10	10
Faculty exchanges	2	4	4
Pedagogy	Didactic and experiential	Blended learning	Blended learning
Tools	Moodle, Skype	Moodle, Skype, wiki	Moodle, Skype, Adobe® Connect Pro
Pedagogical approach	Lectures, exercises, group work on cases and coordination, guest speaker	Short lectures, exercises, cross-cultural case on joint venture, weekly personal diary, guest speaker	Short lectures, exercises, cross-cultural case on joint venture, cross-cultural case on virtual teams, guest speaker, questionnaires on culture and team behaviors, end of module personal diary
Student nationalities	Japan, France	Limited number of Japanese, France + misc. nationalities Africa, Asia	Japan, France + misc. nationalities Africa, Asia
Guest speaker session	From Japan and France, on cross-cultural management	From France, on regional clusters of innovation	From France, on global virtual teams
Socializing events	None	One in Tokyo, one in Grenoble	One in Tokyo, one in Grenoble

introduced the specific realities of Japan and France. Exercises were built around participants' perceptions, projections, and interrogations concerning the partnering country and culture and later intended to facilitate relationship development and a sense of belonging.

According to the content-related points mentioned further above, the five learner groups, composed of two students from Tsukuba and two from Grenoble, were to work on two case studies retracing the creation and evolution of the Renault Nissan joint venture and to look at aspects of cultural integration and concurrent managerial challenges, especially with respect to leadership and subsequent changes in alliance building. The student groups, limited to ten participants per site – due to the technology-mediated setting – managed their teamwork using e-mail, Skype, and Moodle. They were also granted one of the online sessions in the form of a videoconference to prepare their final presentations on Renault Nissan. At the end

of the course, two Tokyo-based Japanese and French executives from Renault Nissan joined in as guest speakers in order to share experience from their everyday work in the cross-border joint venture and respond to questions from the audience. In a post-module assignment, participants formulated their personal impressions, experience, and conclusion of the course.

The 2010 Elective

The year 2009 had proven the feasibility of the joint Tsukuba-GEM management course. A series of videoconferences was held by faculty in order to debrief and capitalize on this first experience. The following changes were planned for the 2010 edition.

The general impression of faculty and students was that the duration of 5 weeks was insufficient to cope with a variety of requirements; time was perceived to be too short to:

- Develop in the virtual teams a team relationship and a work routine
- Cope with English as a foreign language and its many variations in terms of accents and intonations
- Complete readings and assignments
- Explore and discuss culture and management-related questions tied to the course
- Experience team life cycle and cultural differences

It also occurred that participants in Tokyo and Grenoble were not only Japanese and French but also from Central Asia, North Africa, West Africa, China, Bangladesh, Turkey, Austria, and Denmark, thus raising the question of whether to broaden the scope of the course to cultures other than Japanese and French.

As a direct consequence, the partnering institutions decided to double the duration of the course from five to ten 2.5-h sessions plus an initial informal presentation and preparation session. The former trial project was properly listed as an elective course within the institutions' curriculum. This very decision entailed substantial reengineering of the course. While during the 2009 edition there had been one faculty exchange of two professors, there would now be two faculty exchanges of four professors between Tokyo and Grenoble in order to help create necessary commitment, group feeling, and team spirit between the two distant locations through a minimum of face-to-face interaction during and after class hours. Exchanging faculty would systematically play an active part during their visit at the partner institution in order to motivate the exchange and underscore the importance of social relationship development in a geographically distributed learning environment.

As a consequence of the professional, cultural, and national diversity of the students, several changes were made: first, regarding cross-cultural issues, a joint-venture case study featuring a greater variety of stakeholders from various origins was sourced. Second, additional case studies with perspectives on innovation, internationalization strategy, and knowledge management were added to analyze cross-cultural dimensions in a variety of management contexts.

The 2009 course had attracted attention to the issue of technology-mediated learning across borders. Hence, Grenoble acquired licenses for a PC web-meeting tool, Adobe® Connect Pro. Faculty trained themselves using the tool before suggesting its use to students to meet virtually, discuss, and jointly work on ideas using a screen share for whiteboard, Microsoft Word, or PowerPoint. Unlike Skype, this screen-sharing function enables remote members to see, share, and edit a single document in real time. The introduction of the web-meeting tool would free the former in-class team coordination session and strengthen asynchronous learning activities around the virtual classroom.

At the end of the 2009 course, students had vented frustration about insufficient time and opportunities to get in touch in more personal terms. Consequently, on Moodle, the course-management system, apart from the initial upload of personal profiles including a picture and a paragraph on personal interests, motivations to join this course, etc., the faculty team introduced an online discussion forum and explicitly encouraged students to partake actively. Discussions started in class could now be resumed and enriched after class on the forum. In addition, a "wiki" was activated, and students were required to upload a weekly personal journal in order to reflect on their perception, participation, distant teamwork experience, and learning.

Compared to the 2009 course, there were more topics, more lectures by specifically qualified faculty, and more group work. The original balance between didactic pedagogy and experiential learning meant a shift towards the latter. The guest speaker session was retained to blend book learning, case discussion, and real-life experience. The 2010 edition guest speaker session bore on innovation management and clusters.

The 2011 Edition

A variety of observations pushed towards further innovation of the Tsukuba-GEM Project course design. First of all, after having widened the scope of analysis and discussion to cross-cultural management in global business, the course title and content needed adaptation again to reflect this orientation more closely.

Also, looking back at how distributed virtual teams had operated and used IT and, in particular, web-meeting tools, new and yet unsatisfied needs arose: what do globally distributed virtual teams need in order to become efficient and effective? The 2011 edition would thus push self-reflection and analysis on issues such as group vs. team and culture of origin in virtual team management.

The following changes were implemented: the relative part of formal lectures within the overall course was reduced to two lectures over ten sessions. More careful attention was borne to introducing the web-meeting tool and training. Students were given the responsibility to learn and promote the use of the tool within their respective groups. Pedagogy as a whole shifted from the initial mix towards experiential learning, in which individuals were expected to integrate their respective teams, work together on a series of regular task assignments, and submit their

group work with deadlines. In doing so, they were confronted with the challenges of time management in organizing across time zones (heightened by the fact that the Japanese students are working professionals and not easily available during office hours), time management, and overall handling of the web meetings in the perspective of producing satisfactory results within a limited amount of time. The two lectures named above, plus a number of short cases and various exercises, still bore on cultures in management-related issues. But, beyond that point, the idea of really engaging personally, as a member of a cross-cultural and geographically distant project team without face-to-face interaction, becomes much more prevalent. Intercultural learning occurred mainly within the teams, albeit in differing amounts, according to relative task or relationship orientations observed between respective teams. To stick with the updated topics of the course, the following changes were made:

- Readings on international teams, team life cycles, and trust building
- A full session dedicated to a case on a virtual global team facing serious difficulties
- The faculty team, having undergone this very experience over the last 3 years (and more for some), keeping track and feeding back periodically
- Guest speaker sharing own experience as manager and leader of a global virtual team in a well-known global corporation

With all these changes and limited time, the weekly personal journal had to be dropped. A personal takeaway post-module assignment indicated that, despite learning activities designed to mirror real-life professional teamwork in a global and culturally diverse business environment, students reported persisting challenges. Simultaneously, this learning project, perceived by several participants as on-the-job training, was valued as a meaningful opportunity to acquire specialized skills and sometimes even as personal enrichment.

Discussion

The past three occurrences of this course have enabled the four faculty members involved at the two institutions to refine the joint offering and drawing a set of effective practices in the areas of institutional support, course structure, blended learning, tangible diversity, and cross-cultural learning.

Institutional Support

As previously argued by Alavi and Gallupe (2003), e-learning is usually the result of explicit organizational strategies. In this instance, the joint e-learning initiative was born out of both GEM and the University of Tsukuba's desire to offer their students a new experience beyond traditional international business learning. The

geographically distant nature of the two universities became the main driver for blended-learning format combining students and faculty from both sides and thus providing a learning opportunity for both universities.

This experiential cross-cultural course was made possible, not only thanks to strong top-level institutional support but also thanks to the relationship of the four faculty members developed over more than 3 years, as well as to their diversity in terms of cultures, nationalities, academic, and business experiences. Therefore, it is important to note that this type of course would be difficult to extend to other subjects as it would involve a different set of professors who would need to be willing to and to learn to work together.

Course Structure

Through trial and error, the course now features 10 sessions to provide students enough time to get used to the tools and format of the course, as well as utilize them fully after a ramp-up period. As standard course formats are different between academic institutions of different countries, the two universities had to adapt to the less flexible one, here Tsukuba. Regarding the number of sessions, in reality, the Grenoble side included one more off-line pre-course session to comply with its own academic credit-hour requirements. This arrangement shows that the two universities can still retain some autonomy in working together.

Every year, the faculty found that too much content was being crammed into each session, even when the duration of the course was doubled, and cross-cultural classroom discussions had to be cut short to cover the remainder of the session's planned topics. Furthermore, there were too many assignments, and students on the Tsukuba side were especially overwhelmed, considering that they work full-time besides pursuing an academic degree.

Blended Learning

The blending of synchronous and asynchronous learning, or the combination of different modes of delivery and modes of teaching and learning (Procter 2003), was chosen as the most efficient way to build on the social aspect of learning and to provide an opportunity for reflection (Clouse and Evans 2003). This mixed approach was found to fit well with the challenge of physical, time zone, and cultural distance among all participants, including students and faculty.

Most working professionals from Tsukuba were already familiar with global virtual teams as they were working for large international corporations using this type of organization. For the younger students from Grenoble without little work experience, such distance-learning course leveraging geographically distributed teams was first a challenging discovery and second, can be useful in preparing for an international career where the use of such tools and collaboration across time zones are becoming commonplace.

Students need to be given time to reflect on the course through the use of journals and be engaged in active forums to discuss relevant topics with fellow classmates and faculty. However, such threaded discussions require active management and participation from faculty, whose usual involvement is limited to the classroom. Such blended learning therefore demands a rethinking of the professor's role and pedagogical approach, which should now encourage discussions and exchanges on- and off-line.

Tangible Diversity

The exchange of faculty was decided mainly to overcome the feeling of distance and remoteness typical of distance learning and to provide students the rare opportunity to receive firsthand evidence of the course topic, namely, cross-cultural management, by allowing face-to-face access between students and faculty of the partner international institution (Magnier-Watanabe et al. 2011).

Although this exchange incurred a substantial cost to both institutions, the faculty team felt it was certainly needed to bring tangible diversity to the physical classroom. In order to make the faculty exchange more cost-effective, the dispatched faculty taught an additional workshop open to a broader audience while at the partner institution.

Many business schools offer special courses given by visiting foreign professors beyond those taught by full-time faculty. However, the student body itself usually remains unchanged. The diversity of students in this joint course, with students from many different nationalities, provided the rich cultural diversity rarely found in even the most international programs. The faculty team felt that the course was able to bridge several differences, including distance, time, and language, but somehow shortening the gap between younger full-time profiles remained challenging. Based on student feedback, the gap in their experience (or lack thereof) was found to be an issue resulting from different levels of understandings and motivation. As a result, it might be preferable to achieve balance in terms of student profiles and experience. Matching student profiles and motivation would certainly help increase cooperation over the distance separating the two groups and eventually raise learning outcomes. In order to overcome this issue, which had already arisen in the first year, institutional relationships and commitment must be built between relevant programs at each partner institutions boasting similar student profiles.

Cross-Cultural Learning

The cross-cultural topics of the course itself were chosen after the two institutions decided to offer such joint course, based on the appropriateness of the subject and on organizational constraints. The pedagogic method of this joint lecture was a blending of didactic and experiential learning before, during, and after class sessions (Benton et al. 2011).

Students on both sides submitted a post-module assignment describing their learning process throughout the course; this provided valuable feedback to the faculty members. In particular, the post-module assignment showed that the students valued the chance to interact with international faculty, work with international students, and the intervention of guest speakers for the case study. Some students also mentioned that they were happy to have had a chance to experience a virtual team, which they believed would become prevalent in their future work life. As previously mentioned, those students with more work experience would have preferred to work with counterparts with a similar background.

Group work had mixed results as some students felt disappointment or frustration at the culturally different approaches to group work. Those groups who did better were more task- than relationship-oriented, focusing on effectively turning in deliverables. This is consistent with Aubert and Kelsey (2003)'s research which suggests that trust is not as important as information symmetry and good communication. Indeed, the process of interpersonal trust formation heavily depends on the active consideration of available information and the shared history and personal bonding with another person (Hung et al. 2004). However, Rusman et al. (2010) remarked that virtual teams lack an extensive history in the beginning and are therefore more likely to rely on information gathered during collaboration.

Last, younger less-experienced students on the French side were found to be much more open to self-reflection in personal journals, while experienced professionals on the Tsukuba side showed to be more hesitant in self-reflecting upon their course learning. In 2011, the weekly journal assignment was replaced by an end-of-session three-page personal discussion which yielded less self-reflection.

Conclusion

The trend towards greater global interdependence and the need for practical experience of cross-cultural management and virtual teams to overcome the liability of foreignness have proven the necessity of such shared course. This module, jointly held for the third year by two graduate institutions located in two different countries, provides useful recommendations.

First of all, institutional support within both universities is necessary as this type of course tends to use more resources than regular ones. Additionally, because such module requires at least two faculty members, one on each side, a relationship between them needs to be established and cultivated. Second, although the joint course's schedule must adapt to the less flexible institution, the two universities can still add additional sessions to comply with their own internal credit-granting rules. Furthermore, because cross-cultural classroom discussions deal with underlying cultural assumptions, each class session should provide adequate discussion time. Third, blended learning and faculty exchange, incorporated out of necessity, fit not only the unique challenges of physical, time zone, and cultural distance between the two classrooms but also reflect the topic of virtual teams while providing an opportunity to increase cross-cultural tangible diversity. It is important to note that

faculty members need to adapt their teaching style to this pedagogical approach as it requires more direct involvement, especially outside the classroom. Last, the topic of such course can only deal with cross-cultural aspects reflecting its unique setting; over time, for instance, it has come to embrace a more global scope beyond French and Japanese issues to match the changes in represented nationalities of the student body. One of the greatest benefits of this course for students was, by design, the opportunity for experiential learning on the topic of global virtual teams.

This course and its evolving iterations are the result of action research on the part of the faculty members involved in this project. For the next course, the teaching staff will introduce a questionnaire on the antecedents of trustworthiness, consisting of communality, ability, benevolence, internalized norms, and accountability, to determine the most critical factors in building trust in such novel joint cross-cultural management course. Based on these findings, specific assignments and tools will be introduced to leverage those antecedents and make students' cross-border and cross-cultural virtual teams more effective.

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Chapter 5
An Evaluation Model for Collaborative Online Courses: The Impact of Knowledge Sharing and Communication Climate

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Introduction

The concept of lifelong learning has been around since the 1960s (Armstrong et al. 2008). The increasing globalization and changes in the business landscape have pushed this concept into the center of employee development (Mintzberg 2004; Pence and Wulf 2009) as companies' strategic advantage arises from the knowledge and skills of employees. In order to stay competitive in the labor market, an increasing number of professionals follow (part-time) courses and programs (Cercone 2008; Ke and Xie 2009). Due to professionals' lifestyle, which requires them to combine work schedules and family commitments, many employees find it difficult to participate in formal education (Piirto 2010). In order for everyone to have the opportunity to increase his or her knowledge and skills, online courses have become popular (Rienties et al. 2006).

Literature on success factors for traditional, face-to-face courses focuses on the social aspect of learning (Quintana et al. 2006; Sawyer 2006) and the importance of the interaction between the learner and the environment. Within the learning environment, learners can interact and communicate to construct knowledge together and create meaning (van Den Bossche 2006; Tenenbaum 2001). In an online learning

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context, Rienties et al. (2006) showed that the interaction with peers, tutors, and/or technology is an important predictor of satisfaction and learning in university students. From the adult learner perspective, Tynjälä and Häkkinen (2005) found learning to be a social process, organized to support the application of ideas and concepts to the workplace. Hence, it is evident that next to classical forms of knowledge acquisition via self-study, peer learning, interaction, and knowledge sharing are important elements in learning and satisfaction for professionals. Through collaboration, information is used in a social context, and hence turned into applicable, well-anchored knowledge.

However, most literature on the effectiveness of online courses focuses on success factors of online courses for (under)graduates (Tynjälä and Häkkinen 2005). Considering the increasing demand of professional learners (i.e., professionals who next to their work spend time on developing their expertise through courses and other formal learning activities) to participate in online courses, an evaluation model tailored to professional learners was developed. In this evaluation framework, and echoed in research from adult learning theory and team learning, the interaction between participants is the focal driver behind learning and satisfaction. This framework can then be used to evaluate how professionals perceive the learning experience in an online learning course. This leads to the following research question: *Does a psychologically safe communication climate and a high degree of knowledge sharing foster learner satisfaction and perceived learning in online courses for professionals?* To analyze this question, a theoretical framework around collaborative online learning, communication climate, and knowledge sharing is established. Two courses implemented at a midsized European university are then presented, which were both designed for collaborative learning of adults, but received very different scores of learner satisfaction and perceived learning effect. In the discussion, practical implications of our framework for the evaluation of online collaborative courses are given, concluding this chapter.

Theoretical Framework

To understand the learning preferences for professional learners, we must first understand the characteristics of professional learners and the unique needs of this increasingly expansive group. Tynjälä and Häkkinen (2005) reviewed the major theories on professional learner characteristics and outlined five recurrent factors: (1) learning through personal reflection, (2) learning is a social process, (3) a problem orientation to learning activities, (4) learning is organized to support the organization, and (5) learning activities need to be delivered in a flexible manner. These findings have been supported in numerous studies, particularly related to the need for a flexible learning environment and the preference for social learning among professionals. Brown et al. (1989), Rehm et al. (2010), and Wenger (1998) all emphasize the importance of shared knowledge building in professional education. According to the constructivist perspective, learning is not the transmission of knowledge from expert to novice, but a process in which the learner "constructs" his or her knowledge base from his or her interaction with objects in the learning

environment (Rovai 2004; Tenenbaum 2001). The source of knowledge, therefore, is the personal experience of the learner. Consequently, the first overarching premise of this chapter is that learning is best achieved through a social, collaborative process in which professionals can share experiences, reflect, and build knowledge collectively.

This implies that if two learners work together, they have to find a common ground (i.e., a common understanding of the learning environment) in order to construct knowledge together (Tenenbaum 2001). Past research in online courses reveals that social interaction has a positive impact on learning (Hull and Saxon 2009; Ke and Xie 2009; Rovai et al. 2009). Moreover, Tynjälä and Häkkinen (2005) found that due to greater amount of work experience, professionals are accustomed to engaging in learning when they are presented with a problem. By discussing the learning material with others, participants of learning groups become aware of each other's problem definition (Cronin and Weingart 2007; Hull and Saxon 2009). If the group establishes that the individual problem definition does not overlap, individual participants need to present arguments for their definition or relinquish it (Hull and Saxon 2009). If this conflict (in an individual's perspective) is resolved, the team arrives at a common understanding of the problem and solution path (van Den Bossche 2006; Hull and Saxon 2009). Connected to this social dimension of learning, the level of knowledge sharing within a group has been repeatedly shown to influence their level of knowledge creation (Gibson and Gibbs 2006; de Vries 2006; Wasko and Faraj 2005). Lastly, due to the commitments professionals have, the learning activities need to be offered in such a way that participants can decide on the learning pace and time (Booth et al. 2009; Hutchins and Hutchison 2008; Slotte and Tynjälä 2005).

Online learning options provide attractive solutions to accommodate such needs. In addition, the literature above highlights the importance of creating flexible learning opportunities for professionals that promote collaborative knowledge sharing/building. Yet, research also highlights the conditions and optimal environment needed for collaborative exchange to occur. Previously, two concepts were identified by literature that influence the amount of knowledge created in a group of learners. Firstly, given that learning is a social activity for professionals, it involves the risk of appearing ignorant by asking questions (personal risk) and consists of activities that can cause strains in social relationships (interpersonal risk). Edmondson (2003) states that to learn effectively, individuals need to experience a psychologically safe environment, defined as the "degree to which people perceive their work environment as conducive to taking these interpersonal risks" (p.5). In online courses, such a safe environment manifests itself in the team's communication climate, defined as accepted communication behavior between individuals (Hooff and Ridder 2004). Research has shown that communication climates characterized by psychological safety, openness, and vertical and horizontal communication flows, as well as by reliability of information, are conductive to the distribution and creation of knowledge in a group (Ali et al. 2002; Gibson and Gibbs 2006; Hooff and Ridder 2004). Secondly, once learners feel safe to engage in learning activities, they can engage in knowledge sharing. Within the framework of online communities of practice, van den Hooff and Ridder (2004) state that knowledge sharing is the "process where individuals mutually exchange their implicit (tacit) and explicit

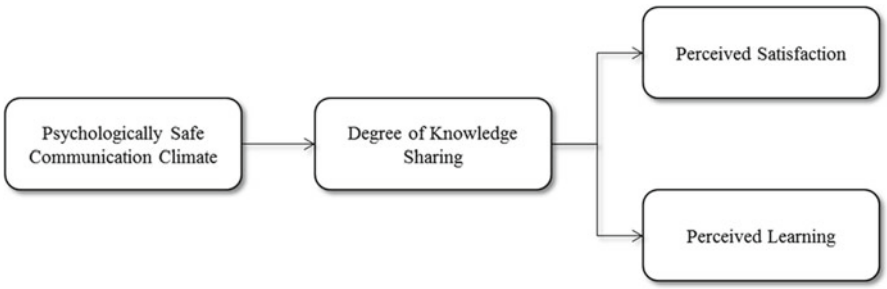

Fig. 5.1 Evaluation model

knowledge to create new knowledge" (p.118). Thus, knowledge sharing is a social activity that leads to meaningful knowledge creation on the individual and the group level (Brown et al. 1989; Wenger and Snyder 1999; Hooff and Ridder 2004; Decuyper et al. 2010). Therefore, to promote collaborative knowledge building among professionals in online learning environments, not only should activities for collaboration and exchange be considered, but they must actively implore strategies to promote a positive communication climate at the onset. Therefore, the second overarching premise of this chapter is that establishing a positive communication climate leads to collaborative knowledge building and results in improved learning and perceived satisfaction among professionals in online courses.

Regarding the outcomes of an online course for professionals, most institutions aim for two outcomes: learner satisfaction and learning effect, based on Kirkpatrick's training evaluation model (1996). First, learner satisfaction is included, based on Kirkpatrick's observation that "people must like a training to obtain the most benefit" (p.55). Only when material is presented in an interesting manner will learners engage in it. Secondly, learning, defined as "what principles, facts and techniques were understood and absorbed by trainees" (p.56), is taken into account. As did Kirkpatrick (1996), both concepts are evaluated based on learner perceptions and feelings. Both learning and learner satisfaction are indicators to determine whether the training is appropriately set up for learners and to ascertain whether it allows the instructor/designer to identify points of improvement.

Based on this literature review, an evaluation model is proposed, arguing that a psychologically safe communication climate supports knowledge sharing in an online course for professionals, and is influential in creating learner satisfaction and perceived learning, as defined by literature presented (Fig. 5.1). The aim of this evaluation model is to offer a guide to course designers and coordinators you wish to explore the level of satisfaction and learning effect among their professional learners. Additionally, by focusing on two conditions for creating these outcomes, the evaluation conducted by course designers and coordinators will result in practical implications for improving the quality of their collaborative online courses.

To explore in how far this model is applicable to reality, an investigation of two online courses offered to professionals has been conducted. In a first step, participants of the first pilot were asked to fill out a questionnaire concerning the concepts mentioned in the evaluation framework. In a second step, instructors (and

coordinators) of the two courses were interviewed for additional insight. The two courses will serve as illustrations of the importance of a psychologically safe communication climate and knowledge sharing for determining a course's success in creating satisfaction and perceived learning.

Methodology

Setting

A 3-year university-wide project (including all disciplines) was conducted at a mid-sized European university to develop successful online courses for professionals and to evaluate the learner experience in these courses. Among the courses created, two were selected to illustrate the use of the proposed evaluation model based on their similar structures that produced polarizing results. One course (we will refer to as Course A) was a policy design course offered to working professionals with a bachelor degree. This course utilized web lectures, a discussion board, and video-conferencing to connect participants working full time and in dispersed geographical locations. The other course (we will refer to as Course B) was offered to full-time professionals pursuing a PhD at a distance. Similarly, this course used discussion boards, web lectures, and videoconferencing to promote online interactions with students from various locations and also used face-to-face meetings. Both courses engaged adult learners who did not know each other prior to their collaborative knowledge building tasks. Both courses used a combination of face-to-face meetings, for preparatory purposes, and online learning activities, which required participants to work together based on their self-study activities. Finally, both courses had experienced instructors (10 years with the institution) that focused on establishing a safe learning environment for knowledge sharing. However, one course was considered successful based on the highly rated perceived learning and perceived satisfaction ratings, while the other course was considered unsuccessful based on lowly rated perceived learning and perceived satisfaction. Furthermore, Course A indicated a high level of collaborative knowledge sharing, while Course B failed to engage learners in the collaborative process. This study, and the proposed evaluation model, helps to analyze the underlying conditions, which may influence learner satisfaction and perceived learning.

Sample

The sample for this study included data collection from 2 instructors and from 14 learners (students). The two instructors, who taught course A and course B, had been connected as lecturers to the university for 10 years each and were involved in the courses analyzed during the full 3-year project period. Both agreed to semi-structured, individual, face-to-face interviews. Learners in course A averaged 30.11 years old (SD = 4.26); most had completed a bachelor or master degree,

Table 5.1 Descriptives of model components

	Course A		Course B	
Model concepts	*M*	SD	*M*	SD
Communication climate	3.52	1.03	2.86	0.53
Knowledge sharing	3.22	0.83	2.95	0.09
Perceived satisfaction	3.61	1.24	3.01	0.79
Perceived learning	3.75	1.39	3.28	0.95
Age	30.11	4.26	39.00	6.78
Gender	1.56	0.53	1.40	0.55
Education level	2.89	0.33	3.20	0.45
Employment level	4.11	0.33	5.00	0.00
Work experience	6.63	2.84	12.80	5.54

worked in an entry level position, and had on average 6.63 years of work experience (SD = 2.84). Learners in course B averaged 39 years old (SD = 6.78) and mostly male; the majority had completed a master degree and were all employed in a managerial position. Learners in this course had on average 12.8 years of work experience (SD = 5.54). Thus, the learner populations of both courses were at different positions in their professional lives, but equally returned to an educational setting while obtaining work experience (Table 5.1).

Procedure

The study incorporated both quantitative and qualitative data collection and analysis techniques. For the quantitative portion, participants responded to a set of statements using a Likert scale, with results used to calculate and measure student perceptions on communication climate, knowledge sharing, perceived satisfaction, and perceived learning. This questionnaire (Appendix 1) was designed based on these four elements and was used to investigate learner experiences in depth. It was administered to the learners of both courses, approximately 2 weeks after completing the courses, to gain deeper insights into the dynamics that distinguished the varying outcomes in each course, despite their similar setup. The qualitative portion used semi-structured interviews with the instructors of both courses to investigate their view on the model's four elements. Interviews were conducted within 3 months after the courses ended. Coding for specific themes completed analysis of the qualitative data, with each interview transcribed and entered in Atlas t.i. computer software for categorization of participant quotes.

Measures

To measure the four variables introduced above, a questionnaire was composed of validated scales measuring each concept: (1) a psychologically safe communication

environment, (2) the degree of knowledge sharing among participants, (3) learner satisfaction, and (4) perceived learning effect. Participants were asked to evaluate statements in these domain based upon a five-point Likert scale. Measuring the psychologically safe communication climate, Gibson and Gibson's (2006) four-item scale was used, comprising items such as "Course participants are able to say what they think" (Cronbach $\alpha = .94$). These items were chosen as they assess the communication climate in a virtual team. The second variable, degree of knowledge sharing, was measured using van den Hooff and Ridder's (2004) seven-item scale, including items such as "It is normal to share knowledge with other course participants" (Cronbach $\alpha = .95$). While the scale was originally developed for knowledge-sharing behaviors between work colleagues, its focus on interaction pattern between professionals matches the type of participants described in this study. Thirdly, learner satisfaction was measured using Frick et al.'s (2007) three-item scale including items such as "This course was a waste of time and money" (Cronbach $\alpha = .61$). Finally, perceived learning effect was measured using Frick et al.'s (2007) five-item scale with items like "Looking back to when this course began, I have made big improvements in my skills" (Cronbach $\alpha = .51$). These two scales were used as they were validated previously in a study investigated course quality irrespective of instructional design. This provided for the necessary flexibility in assessment with regard to the instructional design methods described in this study. Age, gender, education level, employment level, and work experience were included as control variables. The complete questionnaire can be found in Appendix 1. To investigate how the instructors aimed to create a safe communication climate and to facilitate a degree of knowledge sharing, they were asked the question "What was your main aim in teaching your course?"; probing questions were asked regarding collaboration with and between learners, knowledge sharing, and communication climate. Regarding perceived satisfaction, instructors were asked, "What feedback did you receive on your role as an instructor?" including probing questions on student satisfaction with different aspects of the course. Furthermore, instructors were asked, "What did you do to ensure maximum learning effects for students?" Cues were prepared for the areas of collaboration, communication climate, transfer to the learners' workplace, and motivating students. Finally, the question "If you were to teach this course again, what would you change?" was posed to investigate how instructors aim to address issues in communication climate, knowledge sharing, learner satisfaction, and learning in their course.

Analysis

Course A was especially successful when looking at course evaluations by students and the evaluation of student learner reports. Moreover, it received the highest ratings for perceived learning and learner satisfaction. Offered to professionals with a bachelor degree, this 100% online course in policy design used a website for presenting course material, in forms of ereaders, web lectures, and a discussion board,

as well as synchronous videoconferences. In the videoconferences, participants were guided to critically discuss under the guidance of an instructor. Participants earned credits in this course that can contribute to earning a part-time masters degree. The instructor in this course is experienced in teaching online classes and was mostly responsible for facilitating the online meetings. Special attention was paid to an introduction period, in which participants got to know each other before starting on the task. This phase was conducted completely online, via videoconferencing. In the first pilot, nine learners completed the course and filled in the questionnaire. Learners in course A reported high satisfaction and perceived learning effects in an initial course evaluation. The descriptive results indicate that learners in course A experienced a good communication climate ($\mu = 3.52$, $s = 1.03$) and a satisfactory degree of knowledge sharing ($\mu = 3.22$, $s = 0.83$). Course participants were reasonably satisfied with the course ($\mu = 3.61$, $s = 1.24$) and reported a good level of perceived learning ($\mu = 3.75$, $s = 1.39$).

The instructor of course A, when asked about the communication climate he perceived in his course, stated that learners "*seemed to have a very good relationship with each other, they were actually even organizing social events […] and these people lived quite far apart.*" When asked how he achieved this, he summarized it as "*It was very very spontaneous and interactive, really.*" Regarding the degree of knowledge sharing, he agreed that a good communication climate is the basis but that the instructor holds a crucial role: "*You basically make sure that everybody speaks, you keep them engaged, you even provoke them sometimes with saying things that are slightly off the topic to draw people in.*" Otherwise, he felt that communication and collaboration was flowing very easily in his course. Also, he reported that participants "really appreciated the virtual seminar" and that they found the online setting of the course "*very convenient […] one of them was in her eighth month of pregnancy while she was finishing, and she was just sitting at home doing the course. It was perfect.*" Looking at the learning outcomes, he emphasized the high level of commitment of participants and the diversity and good quality of papers submitted at the end of the course. However, he mentioned that some students found the course load quite heavy; therefore, he is planning to extend the course's duration from 6 to 8 weeks. According to this instructor, the group of participants developed some enthusiasm to work with each other and felt comfortable sharing. This was also due to the passion of the instructor teaching this course and the format used. Therefore, positive group dynamics formed organically and in a spontaneous way, allowing the learners to develop relationships in these virtual environments, while supporting their needs. However, instructor efforts are necessary to establish a supportive framework for collaborative learning, e.g., by spending time to get to know each other, establishing clear ground rules for participating such as having to be prepared and logging in on time, steering the discussion with critical questions and examples, drawing on student work in the discussions to stimulate identification, and relating discussions to political news and developments. At the same time, offering students to use collaborative tools without strict supervision of an instructor leads to informal ties between participants which also strengthened the learning relationships during collaborative online sessions.

Course B, on the other hand, met more challenges in creating satisfaction and perceived learning. Course B was offered to full-time professionals pursuing a PhD at a distance. The course consists of 10% face-to-face meetings, one to establish the course atmosphere in the beginning and a series of meetings throughout the PhD trajectory. The remaining 90% of the course takes place online, with the help of asynchronous discussion forums, web lectures, and videoconferences. While each participant is expected to manage an individual PhD project, participants of this PhD trajectory are expected to acquire the basics of doing research together. In a series of modules, participants are expected to build basic knowledge of statistics, on the one hand, by engaging with material for individual study and, on the other, by working collaboratively on problem statements posed to the group, to be prepared on the discussion boards and discussed in more detail in the videoconferences. The instructor in this course also has experience with guiding online learning groups. His aim is to enable the PhD candidates to collaborate in order to manage their trajectory efficiently. By providing the material, answering individual questions and moderating collaboration both on the discussion board and in the videoconferences, he aimed to create a safe and supportive environment for knowledge sharing. The instructor of course B is also the course coordinator. In course B, five learners participated and filled out the questionnaire. In an initial course evaluation, learners indicated low satisfaction and little perceived learning effect. Ratings in course B of communication climate and degree of knowledge sharing lie below the mean scores of course A ($\mu = 2.86$, $s = 0.53$ and $\mu = 2.95$, $s = 0.09$, respectively). Looking at learner satisfaction and perceived learning, scores also remain below the evaluation of course A ($\mu = 3.01$, $s = 0.79$ and $\mu = 3.28$, $s = 0.95$, respectively.) In course B, the instructor made significantly different comments regarding the four model elements. When asked about learner satisfaction, he confirms the quantitative findings presented above: "*Funnily enough, they thought that everything was going nicely except their own willingness to collaborate.*" When asked about how he had perceived the communication climate in his course, he reported that learners appreciated the opportunity to get to know each other face to face and that they "*liked the fact that they could exchange with each other online as well, but they completely acknowledged that they didn't collaborate as much as they could have.*" When asked how he tried to motivate students to collaborate more, he summarized his experiences in this specific course as follows: "*If they don't want to, it is because they don't see the added value, then motivation is pretty much a lost cause.*" As a consequence of this finding, also regarding the degree of knowledge sharing and perceived learning, he emphasized that the added value of each element of an online course must be communicated explicitly to the learners. To motivate student engagement and collaboration in future runs of the course, he plans to further increase the link between the course content and the learners' task at hand (completing their PhD) by setting up a mentor system between learners at different stages in the PhD program in a blended format, while providing opportunities to also collaborate with each other and to directly contact faculty members. In this second pilot then, while the instructor aimed at creating a supportive learning environment, and expected the establishment to be relatively easy, given the face-to-face time in the beginning

of the course, it did not work as well. Drawing learners in by demonstrating the value for students to participate in collaborative activities and connecting it to both their PhD topics as well as to real-world events apparently did not convince participants to share as much as they could. Feedback he received from participants indicated that they were not motivated to log into a learning environment they would not use otherwise, having to remember, e.g., to log in regularly and another password. Thus, it appears that the integration of purpose and choice of tool was perceived differently by instructor and participants.

Thus, despite the similar course setup, the outcomes are very different in the two courses. Since the quantitative data only represents the opinions of the small number of students who participated in the pilots discussed, the quantitative data collection was enriched with interviews conducted with the course instructors. Based on this combined analysis, it appears that indeed the communication climate in both courses played a crucial role in determining the degree of knowledge sharing, learner satisfaction, and perceived learning. In the courses presented, two different sources could be identified that can foster or hinder the establishment of a psychologically safe communication climate for knowledge sharing: instructor behavior and the perceived threshold with which the online learning environment is accessed and used by participants.

Discussion

In revisiting the research question formulated at the beginning of this chapter, "*Does a psychologically safe communication climate and a high degree of knowledge sharing foster learner satisfaction and perceived learning in online courses for professionals?*", the analyses reveal three main conclusions.

Firstly, based on the quantitative analysis conducted, it appears that a safe communication climate, as well as the degree of knowledge sharing in an online course for professionals, has an impact on resulting learner satisfaction and perceived learning effect. This impression was derived from questionnaire data and was substantially supported by interviews conducted with the instructors of both courses. According to their perceptions, communication climate and degree of knowledge sharing differed substantially between courses. This confirms the hypothesis that a psychologically safe communication climate serves as a critical, influential foundation for an effective online course for professionals.

Secondly, it appears that both courses (course A and course B) managed to address professional learner needs as defined by Tynjälä and Häkkinen (2005) to differing degrees. The instructor of course B mentioned, "*If [the learners] don't want to it is because they don't see the added value, then motivation is pretty much a lost cause.*" Thus, it appears that course A was better able to create a social learning environment in which people exchanged relevant knowledge in a problem-based setting, leading to increased collaboration, satisfaction, and perceived learning. According to the instructor, the good atmosphere depended on his efforts as

described above, as well as on the willingness of participants to commit to the course and share, as well as on the instantaneous fit between participants, connected by similar motivations and a desire to learn by collaborating.

Learners in course B, on the other hand, apparently did not see the need for collaborative learning in the format that was offered to them. For them, the connection between the learning goals of the course and the technology used to reach these goals was not clear. Thus, despite the instructor's efforts, the collaborative tools had a too high threshold to be regularly used by participants. This impeding factor to collaboration might also be reflected in the relatively lower scores of participants on both psychological safety and degree of knowledge sharing, as well as on satisfaction with the course and perceived learning. Thus, addressing the specific needs of this learner group in terms of ease to use collaborative tools and explicitly communicating the added value is paramount to course success.

Finally, it appears that the instructor's role is crucial in establishing a safe communication climate and to encourage knowledge sharing between participants. According to the constructivist perspective, learning is a process in which the learner "constructs" his or her knowledge base from his or her interaction with objects in the learning environment (Rovai 2004; Tenenbaum 2001). This learning environment contains the interaction with instructors and other learners, as indicated by the results above, but also addresses the course design: how learning tasks are structured (Knowles 2003; Kolb 2003; Merriam 2001), feedback received on performance (Rovai 2004; Zimmerman 2006), and ease of interaction with the online learning platform (Tyler-Smith 2006). Thus, the learning environment in online courses for professionals must be created with their learner needs in mind, to ensure that they can conduct relevant, collaborative learning activities by sharing their knowledge in a meaningful and flexible way, facilitating individual and shared reflection on the side of learners and instructors.

Limitations of this study are related to the generalizability of the outcomes. While the findings provide insight into the dynamics of two online courses for professionals, the sample size of the questionnaire portion is rather small. In addition, self-report data is used, though two perspectives on the same courses are combined, those of the learners and the instructors, to create a deeper insight. Finally, cross-sectional data is used to identify concepts relevant for future research, however, not providing causal evidence for the relationships proposed.

Thus, future research should focus on quantitatively validating the evaluation framework proposed, taking into account the professional learners' needs, course design, tool use, instructor behavior, a safe communication climate, and degree of knowledge sharing in creating a satisfying, relevant learning experience. Next to testing this framework with a larger sample size, causal relationships should be established, using longitudinal and experimental research setups. In this way, a validated evaluation framework could be created that helps educational professionals in a multitude of institutions to create effective online courses for professionals, resulting in practical implications of how the quality of collaborative online courses can be improved, based on the elements of a successful online course for adults identified in this study.

Appendix
Questionnaire Used to Evaluate Hybrid Courses

Question (measurement)	References
Demographics	
Please indicate your age (in years)	
Please indicate your gender (1 = male, 2 = female)	
Please indicate the highest educational degree you have obtained (1 = secondary school, 2 = BA/BSc, 3 = MA/MSc, 4 = MBA, PhD, 5 = others)	
Please indicate your current employment status (1 = unemployed, 2 = student, 3 = internship/work placement, 4 = entry position, 5 = managerial, 6 = board/executive, 7 = others)	
Please indicate the amount of work experience you have gained (internships are part of work experience) since completing your education (in years)	
Communication climate	
I felt comfortable conversing through the online medium (1 = strongly disagree to 5 = strongly agree)	Gibson and Gibbs (2006)
I felt comfortable participating in the course discussions (1 = strongly disagree to 5 = strongly agree)	
I felt comfortable interacting with other course participants (1 = strongly disagree to 5 = strongly agree)	
Course participants are able to say what they think (1 = strongly disagree to 5 = strongly agree)	
Knowledge sharing	
When I understand a topic, I share my understanding with other participants in the course (1 = strongly disagree to 5 = strongly agree)	van den Hooff and Ridder (2004)
When other participants in the course understand a topic, they show their understanding to me (1 = strongly disagree to 5 = strongly agree)	
It is normal to share knowledge with other course participants (1 = strongly disagree to 5 = strongly agree)	
When somebody from the course posts a question, I try to answer it (1 = strongly disagree to 5 = strongly agree)	
When I post a question, other course participants try to answer it (1 = strongly disagree to 5 = strongly agree)	
If somebody asks me a question, I answer it right away (1 = strongly disagree to 5 = strongly agree)	
When I ask a question to somebody, he/she answers right away (1 = strongly disagree to 5 = strongly agree)	
Perceived satisfaction	
These questions deal with the outcome of the online module: I am dissatisfied with the course (1 = strongly disagree to 5 = strongly agree)	Frick et al. (2007)
These questions deal with the outcome of the online module: This course was a waste of time and money (1 = strongly disagree to 5 = strongly agree)	

(continued)

(continued)

Question (measurement)	References
These questions deal with the outcome of the online module: I am very satisfied with this course (1 = strongly disagree to 5 = strongly agree)	
Perceived learning	
These questions deal with the outcome of the online module: Compared to what I knew before I took the course, I learned a lot (1 = strongly disagree to 5 = strongly agree)	Frick et al. (2007)
These questions deal with the outcome of the online module: I learned a lot in this course (1 = strongly disagree to 5 = strongly agree)	
These questions deal with the outcome of the online module: Looking back to when this course began, I have made a big improvement in my skills (1 = strongly disagree to 5 = strongly agree)	
These questions deal with the outcome of the online module: I learned very little in this course (1 = strongly disagree to 5 = strongly agree)	
These questions deal with the outcome of the online module: I did not learn much as a result of taking this course (1 = strongly disagree to 5 = strongly agree)	

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Chapter 6
MBA Applied Research Projects: Authentic Learning for the Hospitality Industry

Peter Juskiw and Lyn Glanz

Introduction

This chapter considers the educational basis of a capstone Applied Research Project (ARP) on an MBA course in International Hospitality Management. The ARP scheme pairs groups of students with hospitality managers working for a major hotel chain to work together on the collection and analysis of evidence on contemporary business issues with the opportunities for continuing learning and development for all parties: the students, the academic institution, and the partner business organisation. According to Lashley (1999), to develop as 'reflective practitioners', hospitality management students need support by setting their learning in applied contexts. In this chapter, we offer a conceptual model to describe the relationship between the academic organisation and the industrial partner in these ARPs.

Commissioned projects such as these ARPs are gateways where students can demonstrate their ability to apply their academic discipline to a real-time problem in an organisational setting and work in a team with designated managers on work-based problems. Past commissioned projects within the hospitality sphere (Ball 1995) are suggested to have benefited key stakeholders, students, tutors, and clients, and they demonstrate a trend in educational contexts to link with industry partners. Such schemes allow 'the company to become an active participant in the research process rather than being merely a consumer' (Sas 2009 p. 714). This is very much

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P. Van den Bossche et al. (eds.), *Facilitating Learning in the 21st Century: Leading through Technology, Diversity and Authenticity*, Advances in Business Education and Training 5, DOI 10.1007/978-94-007-6137-7_6,

in line with the perceived shared responsibility education establishments, and employers alike have to groom and cultivate talent to acquire global competencies ensuring competitive advantage of companies in international labour markets. Zenger et al. (2000) state that such learning will not only increase the transfer of knowledge but will allow organisations to focus learning objectives on specific business results and provide for a true calculation of the impact of educational initiatives. Learning should focus on the learner requiring them to be active and to take the initiative and responsibility for what and how they learn especially in graduate management education (Brownnell and Jameson 2004; Peterson 2004).

Commissioned student projects such as the ARPs described here with a stable partner also enable the academic institution to continually build on operational and theoretical knowledge and expertise. Laughton and Ottewil (1998) suggest such projects 'are not for the "faint hearted"…they are extremely challenging enterprises .... To be successful, projects require conditions in which certain educational values prevail and various pedagogic principles are embedded in the way that courses are designed and delivered' (Laughton and Ottewil 1998).

Literature Review and Model

Three separate but related concepts are seen as particularly pertinent to exploring the learning frameworks behind such educational projects: action research, problem-based learning, and appreciative inquiry. These are described below, followed by a brief description of the ARP scheme, and then the relationship of the main theoretical concepts to the ARP projects is displayed in an academic model (Fig. 6.1).

Action Research

Action research (Lewin 1946; Dickens and Watkins 1999; Raelin 2006) is a concept which supposes that people learn most effectively on authentic problems arising in their own contexts. Raelin (2006) states that in action learning, learning results from the independent contributions of programmed instruction and spontaneous questioning. This contributes to the material that participants already have had through instruction, coursework, or lectures, so participants have some prior knowledge and skills before being given a real-live project in their work settings; by doing this project and by spontaneous questioning, investigation, and experimentation, they improve their skills and knowledge, and this results in behavioural change. These interpretations from the participants are helped, and improvements are made by feedback from other participants and by a skilled instructor; actions taken are subject to enquiring about how effective the theory was at the beginning and how the theory was put into practice (Raelin 2006).

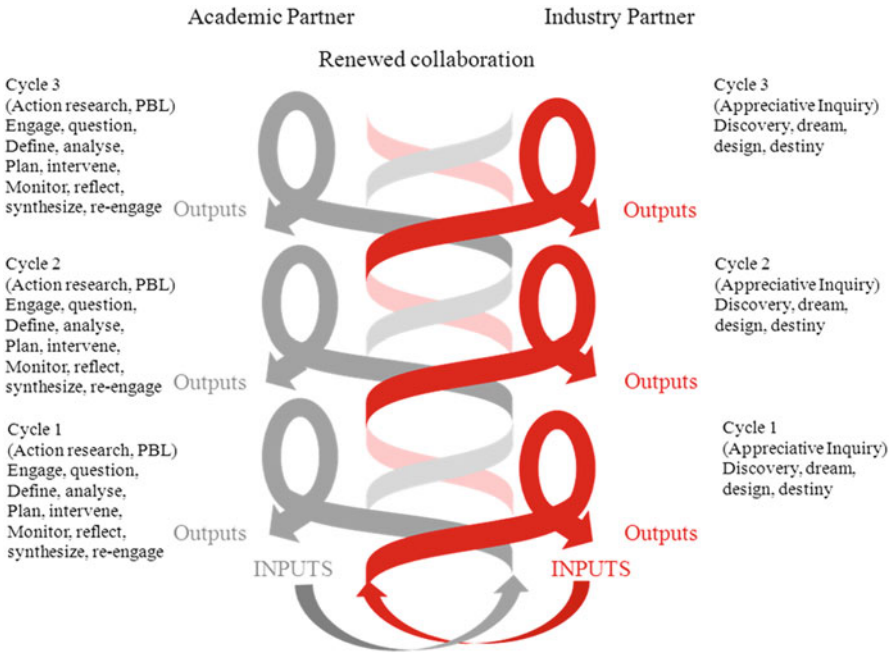

Fig. 6.1 Model of theoretical inputs in Applied Research Projects scheme

Problem-Based Learning (PBL)

Problem-based learning (PBL) is an educational framework originally arising from medical education contexts (Albanese and Mitchell 1993) that exercises students' cognitive and behavioural responses when they are engaged with real-life 'messy problems' (Barell 1998). Stinson and Milter (1996) suggest certain principles underlie the accomplishment of problem-based learning: learning outcomes should be holistic, problems should mirror professional practice, and problems should be ill structured and contemporary.

Usually carried out in groups, such learning is also advocated in management studies (Siok San Tan and Ng 2006; Laughton and Ottewil 1998) where students engage dynamically (Wee and Kek 2002) with issues that may have no clear or coherent resolution—no 'easy' answer.

Appreciative Inquiry

The third concept of importance in the conceptual model is appreciative inquiry (Cooperrider and Sekerka 2006). Appreciative inquiry can be described as an

alternative to problem solving based in social constructionist theory. This is considered as a pertinent and useful theory to describe the process of the interaction by the industry partner in the ARPs who are seen to take on the four stages of discovery, dream, design, and destiny (Cooperrider et al. 2003) in the practical application and/or execution of such projects, leading to renewal and continuation of collaborative projects. In the first 'discovery' phase, interviews are held seeking to draw out positive elements from the core by the stakeholders. Next is where people start to come together sharing their vision of a better world; these then form in their vision—the 'dream' phase. Starting then toward greater purpose, they start to envisage a productive community, in the 'design' phase once the dream is in place. In the fourth phase destiny ownership to the delivery of the design is invested in the stakeholders and become new benchmarks and starting points for new initiatives. Appreciative inquiry techniques can involve the whole organisation, departments, as individuals working together to look deeper into what they value most, stemming from local issues and expanding outward to bigger issues (Cooperrider and Sekerka 2006).

Background to the Applied Research Projects

The applied research projects described in this chapter have taken place over the last 3 years in collaboration between a major hotel chain based in Switzerland and the graduate school MBA programme of a Swiss academic institution. The applied research project is a capstone project where students have the opportunity to demonstrate key master level learning outcomes. Working with industry professionals, students get to propose solutions to real-life, real-time problems using qualitative and quantitative investigation. Topics studied are labelled by the partner as 'useful to know' rather than a 'business risk'. Students follow action research guidelines on a nominated project over 9 months. They then submit a graded management report to the industry partners and decision makers, subsequently developing their individual contribution into a graded individual management report.

Academic goals are established by the institution and understood by the industry partner. There are six stated course goals which suggest at the conclusion of this course; the student will be able to (1) apply skills of project management to the organisation of research process, individually and/or in groups; (2) demonstrate an ability to critically utilise information resources for academic and applied research; (3) apply methods of quantitative and qualitative analysis to business research; (4) develop and apply skills of critical thinking and analysis to an organisational problem; (5) demonstrate an ability to communicate about business research topics for academic and professional audiences; and (6) show an awareness of ethical issues during the research process and as part of the proposed business outcomes.

Aims and objectives for each project are established by the industry partner in consultation with responsible faculty. ARP topics have included, e.g. employee recognition programmes, performance management systems, internal branding, cloud computing applications in hospitality, employing 'Generation Y', social media, and

social networks in the hospitality industry. The industry partner has so far been able to provide sufficient projects to meet demand, and there has been a steady rise in participation from 2008 when two projects were offered involving six students to 2010 when six projects involving 18 students were offered. In all, 36 students and 6 faculties have been involved in applied research projects.

The Conceptual Model

The three concepts outlined above are portrayed in the model below to demonstrate underlying theoretical inputs of the student commissioned project (ARP) scheme. The model is portrayed as a double helix, to indicate continuous learning. One single helix suggests the academic institution's inputs and outputs based on problem-based learning concepts and action research; the other displays the industrial partners' inputs and outputs based on appreciative inquiry.

In common with all action research, the ongoing nature of learning and development for both partners is portrayed in the model. On the academic partner helix, each annual cycle (corresponding to a student cohort and project group) contains the process elements taken from action research, problem-based learning, and appreciative inquiry. It uses a synthesis of concepts involved in these three theories, well documented in literature of the theories, that are described in the model as engage (Laughton and Ottewil 1998; Yeo 2007a), question (Wee and Kek 2002), define (Edmonstone 2002), analyse (Wee and Kek 2002), plan (Wee and Kek 2002; Yeo 2007b), intervene (Lewis et al. 2008), monitor (Laughton and Ottewil 1998), reflect (LaRue et al. 2004; Raelin 2000; Wee and Kek 2002), synthesise (Laughton and Ottewil 1998; Wee and Kek 2002), and re-engage (Lewis et al. 2008). However, all these elements may not be contained within single student cohorts' projects. Most cycles will contain some projects involving the elements of engage, question, define, analyse, and plan, while others will pick up on previous projects to monitor, reflect, synthesise, and re-engage. On the industry partner helix, each annual cycle corresponds to a set of projects, and their processes are described by the appreciative inquiry model to incorporate elements seen to offer a reflection of business practice (notably the phase of 'delivery'). Similarly, most cycles will contain some projects involving the elements of 'discovery and dream', while others will pick up on previous projects design and destiny as the industry partner implements initiatives to be monitored in later projects. As a social constructivist theory, rather than portraying a rigid linear process, appreciative inquiry allows for changes in perception for the industry partner as the helix unfolds over a number of projects. In this way, outputs form the central spine of the helix, continuing to inform future development. On the other hand, some outputs have a limited life and specific purpose and are not pursued over time, although continue to add to the input of collaboration for both partners.

Inputs on the industry partner single helix include past collaborative relationships with the academic partner, new 'messy' problems to be researched that fall into a 'useful (not crucial) to know' category, data, and management support for the

projects. Inputs on the academic partner single helix include past collaborative relationships with the industry partner, research expertise, and previous analysis of pertinent problems with the partner and faculty support for the projects.

Outputs on industry partner single helix appear to include presentations on completed project analysis, assessment and recruitment activities, practical business solutions, organisational change, informal consultancy and networking. Outputs on the academic partner single helix for the institution seem to be research studies, student placement, subject knowledge enrichment, and curriculum relevance, industry updating, and networking. For students, outputs appear to consist of enhanced student reflection and synthesised learning (Powers and Tiffany 2006; Goto et al. 2010), employability, and networking (Smith and Clark 2010; Dickens and Watkins 1999; Barthorpe and Hall 2000; Gagnon and Smith 2001).

The Concept in Practice: Generation Y Project

A brief summary of the progress of one project, 'the Generation Y project', over several years is given as an example below.

At the moment, the hospitality industry is very focused on the generational group known as 'Generation Y' or the 'Millennials'. Generation Y consists of people born from the beginning of the 1980s until 2000, a group that is estimated at approx 2.3 billion people all over the world representing the largest demographic segment of consumers in most developed countries. In 2009, the hotel chain now involved in the Applied Business project conducted an employee satisfaction survey which revealed that approximately 65% of the partnership chain's employees in Europe were under 30 years old and that 55% had been with the company for less than 2 years. The chain felt that these statistics revealed that the company needed to build a long-term relationship with these employees, so as to indentify the exact needs of Generation Y. In particular, the company had noted a lack of loyalty in craft-based employees following in-house training. The hotel chain wanted to look at motivation and retention, and this was the basis of the first project.

The theme of motivation and retention became the 'inputs' for further 'Generation Y' Applied Business project that took place over the next year. The first year, the MBA students conducted their research in Europe, and five multinational teams in all of (a total of 15) students over 2 years have been digging down into existing data and elaborating on themes through interviews with hotel employees to research the characteristics of Gen Y in some of the major countries in which the hotel chain operates in around the world. The second cycle looked at Gen Y attributes in China, Thailand, and the Middle East, and the project planned for the next cycle is set to include Eastern Europe and Africa.

The four stages of appreciative inquiry, discovery, dreaming, design, and delivery, can be applied to this longitudinal project. In the discovery stage, management and staff are engaged in an exploratory meeting with students. They are asked if they can think back to a moment that stands out, such as an exercise they were part of, or

a life experience that stands out as exceptional, and left them enthused, excited. This could be anything from customer service, values to working for an exceptional manager. In the 'dreaming' phase, students are asked by managers 'what could be' next as the group develop vision, what could the world look like, if moments of success were the norm. The 'dream' phase involves imagining the possible (and in some cases confronting the nightmare) of a rapidly changing landscape. As a start to the design stage, the industry partners engage the students in a series of research questions to further the discovery of actuality and to test if what is imagined has a basis in evidence. Then the design stage is reached through consensus to achieve the dream. The students are told to 'think Big' as this is the provocative stage in the process; industry partner managers want to hear solutions out of the box, which involves stretch for the organisation. In the delivery stage, strategies and plans are put into place; this involves monitoring, evaluation, and feedback (Hammond 1996; Elliot 1999). Students, in the second part of the study, also reflect on the findings of the former groups, but different themes are developed. Appreciative inquiry is a highly successful tool that contributes to team building and discovers, expands, and sustains what an organisation has to offer (Hammond 1996).

As far as the academic institution is concerned, the focus is on a combination of action research and problem-based learning. In their study of commissioned projects in business education, Laughton and Ottewil (1998) suggest that the method of instruction that employs commissioned projects can be seen as a form of problem-based learning in that (a) student learning occurs by students being challenged by situations needing to be solved (Ellington and Harris 1986), (b) active involvement of students learning in the context of where knowledge is to be used (Boud and Feletti 1997), and (c) such projects promote 'learning by doing' (Winn 1995). So in a problem-based learning framework, practical problems are seen to stimulate and inspire a succession of learning experiences in line with projected skills at masters level (Yeo 2007b).

The students engaged on the Generation Y project, then, were faced with authentic issues arising from their discussions with the hotel chain managers. Through literature reviews students discovered that as workforces have progressively become more diverse in race, gender, ethnicity, and generation, to accommodate these differences, the workplace is a challenge for human resource practitioners (Zemke et al. 1999). Meanwhile, the demographics of human resource around the world is experiencing a tremendous transition that baby boomers are retiring in growing numbers and Generation Y is gradually taking over the workplace (Marion 2011; Cassidy 2010; McCrindle 2010; Myers 2007; Sutton and Narz 2007). For example, 'there is a growing realization that the gulf of misunderstanding and resentment between older, not so old, and younger employees in the workplace is growing and problematic' (Zemke et al. 1999, p. 1). Except for the generational shift, traditionally, the frontline work in the hospitality industry is fulfilled by a large pool of youth (Magd 2003).

As workforces have progressively become more diverse in race, gender, ethnicity, and generation, the workplace has become progressively more challenging for human resource management practitioners (Zemke et al. 1999). Diversity, combined

with competition in the marketplace, continuously presents new challenges for hospitality and tourism organisations. These various age groups clash in the workplace in many ways, such as generational ideological conflict and resentment (Lancaster and Stillman 2002). This relationship between demographic and cross-cultural sectors was one of the themes investigated by the Generation Y project.

Lancaster and Stillman 2002 argue that younger employees might be sceptical about the value of institutional relationships during the early stage of their employment (Tulgan 2009). This significant socio-demographic characteristic, which can be considered generational affiliation, was also considered to be worthy of investigation in the Generation Y project.

The hotel chain in question has a portfolio of 60 luxurious and exclusive properties around the world and is planning to expand in new and existing markets while doubling its size in coming years. The chain will need to hire a great amount of people that should match with the corporate culture and values, and this is the main reason why the company sees the importance of studying the behaviour of this new generation that is thought totally different from the previous ones (Generation X and baby boomers). The students conducted focus groups in W. Europe sampling a range of Gen Y employees both craft-based operations staff to management trainees, etc. This is a real example of 'learning by doing' as far as research leading to evidence-based management is concerned. The MBA students, given the opportunity to work on a number of Applied Business projects within the Generation Y overall project, made some important findings, based on both quantitative and qualitative data collected. Based on a previous staff satisfaction survey in the chain, among other related items, 64% of the participants aged under 30 working at a European property in the chain stated they would consider an offer from a competitor. This gave the students ample scope to look into the position of Generation Y in the company. Training for Generation Y was a topic that frequently arose in the focus groups they ran. The employees identified that the chain had no structured management training programmes or development programmes. They all recognised the efforts of the company to provide on-the-job specialised training, but they all mentioned that there was no presence of a career planning programme that would help them perform and develop the skills needed in order to grow higher in the company's hierarchy. The participants also mentioned that if these programmes existed, they would be happier and more satisfied while working for this company. Moreover, most talked about their wish for cross-training programmes that would introduce them to other departments of their property. They also noted superiors apparently gave unfulfilled promises of training, career planning, and promotions.

The participants of the research emphasised the need for detailed job descriptions, manuals, and guidelines that would be constantly updated. Apart from that, the employees requested more training sessions conducted by external trainers and lecturers, experts on their field. Some requested that the company should support them in further education. They requested financial aid and more flexible timetables for this input.

The students found a need by the generation for constant and direct feedback on a frequent basis but particularly on completion of projects. Clear direction was seen

as important. Pay and benefits were not highlighted as much as individual and team awards for achievements with special, even personal, gifts and verbal recognition in many ways confirming existing data on this demographic sector.

The students have been further encouraged to extrapolate potential management responses from the research carried out and defend their suggestions 'in the context of where knowledge is to be used' (see b)-Boud and Feletti 1997 above). Students involved in action research of this type are seen to benefit through shared learning gaining greater self-confidence and self-awareness and to demonstrate the ability to ask better questions, be more reflective, and show improved communication and feedback (Smith and Clark 2010).

Inputs for All Stakeholders

Every cycle begins with the input of a considerable time commitment from both academic faculty and hotel chain managers. This time commitment is not without problems and means the pool of available academic supervisors is small.

Faculty bring considerable academic expertise to match the business acumen and the help in framing research questions inputted by the industry partner. Access to data is provided by the industry partner though at times research funding has been given to students to help collect data from hotels abroad. Accommodation in the hotels is usually arranged through the hotel chain.

Retained or new expertise from the previous cycle is made available through both faculty and managers, but it is incumbent on students to bring a non-judgemental professional research approach and significant commitment to each new project.

Course Outcomes

As far as course outcomes are concerned, every cohort involved in the project has learnt to apply group skills of project management to the organisation of research process. They learn how to work in a team with industry specialists; they are encouraged to take the initiative, in planning and delivery of the project.

They have experienced the 'messiness' and confusion that can impact a real-life research project. In particular access to the industry partner can prove frustrating to the students who then realise they are not priority, for example, one group had access problems to their date base, they contacted the industry partner IT department who had no authority to give them a password, causing frustration. Students learn very quickly to organise their project accordingly with an eye on practical logistics.

The second outcome that students can demonstrate an ability to critically utilise information resources for academic and applied research starts with a comprehensive literature review on the projects' subject matter but is further tested by the need

to chase target information from such database sources as Euromonitor, to cross-check against existing in-house hotel data, and then to process information gathered at interview from hotel managers.

Students apply methods of quantitative (normally using SPSS) and qualitative analysis to business research, and familiarity with these methods is seen as lifelong learning skills for evidence-based management. The organisational ability of the individual to complete a capstone project is also tested by the submission of a final graded document.

The requirement to develop and apply skills of critical thinking and analysis to an organisational problem brings the reality of business into the classroom. Students are briefed at the outset by the management team that they should use the evidence collected as a base to bring forward innovative and creative solutions. The hotel managers do not want textbook examples which they themselves can read up on. In return they offer a clear business line as a response to student's contributions, showing the students the practicality of their suggestions.

One course outcome refers to an ability to communicate about business research topics for academic and professional audiences. This is tested by student presentations at the 9 month stage at the Hotel Chain HQ to the commissioning hotel managers and academic supervisors. These presentations are not graded but are prepared with all care arising from the knowledge that the students are being judged by their professional peers and potential employers. One group of students did an excellent project on how the company could use training programmes to promote their internal branding programme. The company instigated an internal branding programme to reinforce their new core values. The group came up with a portfolio of training initiatives, which the company identified ten which were selected to be used around the world, with the student's permission. However, other groups of students were also working on other projects. Their efforts were assessed by a panel of senior managers to whom they presented their results. While on paper the internal branding project was one of the best projects that had been submitted, the group could not present their finding very well to the disappointment of their manager of the company and also their academic supervisor. The company offers a prize for the best presentation, and the students were very disappointed not to win this, but this contributes to the reality of the 'product' of the presentation being rated rather than the 'process' behind the presentation. One outcome of this for the commissioned projects as a whole is that now the company offers a presentation skills training to all student groups, as they might in a business environment.

All students need to show an awareness of ethical issues during the research process and as part of the proposed business outcomes. This is mainly seen in relation to various confidentiality issues that can arise in projects like these. One group of students had an issue with the data they collected; interviews were conducted with some of the senior managers in the company including the CEO, as the students told the respondents that these were confidential. Initially the students refused to hand over the live interviews to managers at a lower level within the company despite signing a confidentiality agreement with the company explaining that all

data belongs to them. The issue was resolved when students approached their participants requesting the release of the data to the company. This issue remains slightly problematic but has partially been dealt with by ensuring all participants understand the nature of this relationship, with this particular example being a good illustration of difficulties that may arise.

The fact that some results can have unforeseen consequences is also built into the briefing for the programme and exercises faculty reflection as well as student learning. Another group of student in their presentation to the panel reflected on what they had observed as an outcome of their qualitative research. Following their presentation on how present training had been dismissed as being of little value and generally ignored, the COO of the hotel chain immediately confronted the hotel chain provider of the internal training within the session to explain why the lack of efficacy had not been discovered previously, but it transpired that he had some idea that transfer of learning was not taking place and that they referred back to their old ways. An important value within the institution is for all stakeholders to develop as reflective practitioners (Lashley 1999), and this example provided plenty of reflective dialogues not just for students but also for faculty group on the project.

Outcomes for Stakeholders

All stakeholders seem to benefit from the collaboration to some extent, although a cost-benefit analysis has yet to be undertaken. The academic partner has benefitted from other outputs from the applied research projects. Some consultancy work has been generated for the branded consultancy unit of the academic institution to reconcile student research with the practices within the company. Academic papers arising from commissioned projects have been a regular output for the institution, and the hotel chain personnel collaboration has been highlighted and taken advantage of in various periodic reviews and advisory boards.

The industry partner gets added value from having a project delivered with solutions to an identified company problem. In particular it gives the industry partner a chance to explore beyond the most taken for granted solution, as their independence allows students to work on a wider context for potential solutions. At least two significant projects, an internal branding scheme and a leadership training scheme, have been adopted by the company as schemes to develop within the organisation. Managers speak regularly with faculty, and as with all networking, the spread of knowledge and understanding tying theory to practice appears to be valued.

The initiative gives the company an opportunity to view students as potential recruits, and further it highlights the industry partner's profile within the institution for recruitment in general. A fair number of involved students have been offered employment through their participation in the scheme.

Conclusions and Recommendations for Further Research

The ARP scheme is currently 3 years in operation, and the experiences of students and faculty have contributed the model constructed so far. The model is still in development, particularly in terms of constructing an audit of inputs and outputs. Some research in these areas has already been carried out either conceptually or with small samples. Gagnon and Smith (2001) argue that experiential educational techniques which could include students working with an industrial partner on a project could: enhance student learning attitudes initiative and achieve higher levels of learning; offer business and students the concrete learning experience they prefer and which reinforces classroom principles; expose students to adult professionals and their problem orientated focus and challenge students social and communication skills and the ability to independently think. Further research is required on these aspects of outputs in the model together with new insights into inputs and additions to returns on the educational and industry investment.

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Chapter 7
Student Experiences of Self-Reflection and Peer Assessment in Providing Authentic Project-Based Learning to Large Class Sizes

Bart Rienties, Anthony Willis, Peter Alcott, and Emma Medland

Unemployment figures in the UK indicate record high unemployment amongst recent graduates (Office of National Statistics 2012). At the same time, and despite the economic downturn, the number of students entering higher education and continuing with a postgraduate degree in business has substantially increased in the last 10 years. Some researchers refer to this as the 'massification' of higher education (Biggs and Tang 2007; Den Bosch 2008). However, the increase in numbers of students has not been matched with a similar increase in funding to attract more academic staff. As a result, at most business schools, class sizes have gradually increased year by year, making it more complex for business teachers to provide small-group interaction, detailed individualised pastoral care, feedback and support (Gallego and Casanueva 2009).

One of the consequences of increased class sizes in business education is a possible mismatch between what business schools offer in terms of graduate skills and what employers are expecting from graduates. Several researchers have found that business schools do not prepare graduates for the real world of business (Arts et al. 2006; Den Bosch 2008; Gerken et al. 2012). Graduates have to adapt to a new working world when they enter the job market, for example, applying their theoretical knowledge to a work-related context. Both research and practice have found that graduates experience significant difficulties in transferring their acquired knowledge

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P. Van den Bossche et al. (eds.), *Facilitating Learning in the 21st Century: Leading through Technology, Diversity and Authenticity*, Advances in Business Education and Training 5, DOI 10.1007/978-94-007-6137-7_7,

and skills into the real business world when starting their first job (Arts et al. 2006; Tynjälä 2008).

The transition from higher education to the professional world can be eased when graduates know what they are getting into (Gerken et al. 2012). Several researchers (Den Bosch 2008; Gerken et al. 2012) have argued that business schools should adopt certain features of work learning in order to integrate theory and practice. While the existence of the theory-practice nexus in higher education is contested (Hattie and Marsh 1996; Neumann 1992, 1994; Simons and Elen 2007), a number of researchers (Brew 1999; Brew and Boud 1995) have expounded the benefits of this nexus. Within the context of business schools, this integration of theory and practice can, for example, be achieved by allowing students to work on authentic projects (Belei et al. 2009; Thomas 2000), either in cooperation with the business world or in a real-world setting. However, a crucial condition for learning from authentic projects is an appropriate assessment and feedback strategy.

Some researchers argue that giving greater responsibility to students for providing feedback may be as powerful as feedback provided by the instructor (Boud and Falchikov 2007; Dochy et al. 1999; Van Zundert et al. 2010). Taking this argument further into a business education context, peer feedback, may allow business teachers to teach larger classes but still implement interactive sessions with sufficient moments for reflection and personalised feedback, albeit primarily given by students rather than teachers. Self-reflection and peer assessment can provide a rich and valuable learning experience for students. Self-reflection is defined as the involvement of learners in making judgements about their own learning, in particular towards their own achievements and (future) outcomes of their learning (Boud and Walker 1998; Dochy et al. 1999). Van Zundert et al. (2010) argue that peer assessment can be described as a process whereby students evaluate or are evaluated by peers. Previous research has found that self-reflection and peer assessment can boost student self-confidence (Dochy et al. 1999), the development of learning communities (Price et al. 2008), dialogic feedback (Carless et al. 2010; Nicol 2010) and the development of shared understanding of the (often) tacit knowledge underpinning assessment (Bloxham and West 2004; Rust et al. 2003), which can lead to increased student satisfaction (Williams 1992) and improved performance (Van Zundert et al. 2010). While peer assessment traditionally is used for grading or marking peers (Dochy et al. 1999), there is a call for more formative (i.e. for learning) assessment and feedback that goes beyond marking and grading. In a review on the current stance of research and practice into peer assessment, Van Zundert et al. (2010) urges new research to focus on how teachers can effectively implement innovative student-centred learning and assessment forms that lead to enhanced learning.

Using principles of design-based research (DBR) (Collins et al. 2004; Reeves et al. 2005), this chapter compares two consecutive redesigns of a module in hospitality management that ran very successfully in 2004–2009, albeit with only a small number of 9–15 students. Basically, postgraduate students had to implement an authentic project, namely, inventing, creating and organising a profitable event. Using principles of project-based learning, the teacher provided (groups of) students with a large amount of autonomy to plan, implement and reflect upon their project

(Tosey et al. 2008). This innovative and successful postgraduate module attracted an ever-increasing number of students over the years, whereby personalised coaching and feedback by teachers became increasingly difficult. For a substantially larger class size of 36 students, in 2010 the module was redesigned by extending the group size and at the same time introducing (summative) peer assessment in order to ensure that individual contributions to the group processes and products were taken into account.

Based upon low student module evaluation satisfaction scores in 2010, the module was further redesigned in 2011 by implementing continuous formative self- and peer assessment. In line with the guidelines for conducting DBR by Collins et al. (2004), we will analyse the redesign of 2010–2011 in three phases. First, we critically reflect upon the implementation of the initial designs and rationales in 2004–2009. Second, we will provide an overview of the overall rational and design of the second redesigned module in 2010. Finally, we investigate to what extent the redesigned learning environment in 2011, with more individual reflection and peer evaluation, provided a more supportive learning environment for learners as a means of enhancing their learning experience.

Critical Reflection of Initial and Follow-Up Designs of Hospitality Events Management

History of Implementation Event Operations Management 2003–2009

This research takes place in the context of hospitality management at a large business school in the UK that, like many UK business schools, attracts a large number of international or 'oversea' students (De Vita 2001). In the postgraduate specialisation event management, the last (compulsory) module of the curriculum is designed around the notion of 'proof of concept', whereby students had to implement their acquired event management knowledge, skills and experience into practice. The events operations management (EOM) module, initially designed in 2004, has been continuously fine-tuned and further developed during subsequent implementations (Tosey et al. 2008; Willis et al. 2011). In the period 2004–2009, on average 9–15 students per year followed this module during the entire spring semester (5 months), as only a relatively small number of students followed the specialisation of event management. This allowed the teachers to provide ample support and detailed feedback, both on a group level as well as on an individual level.

A key element and innovative feature of the EOM module is the authentic assessment of knowledge, skills and attitudes of participants. Here, 'authentic assessment' is understood to refer to '…assessment practices that are closely aligned with activities that take place in real work settings, as distinct from the often artificial constructs of university courses' (Boud and Falchikov 2007, p. 23). The students formally met

once a week during a 3-h interactive class session in a 14-week period. At the same time, students met with the peers in their group outside class during the week in order to work on three group processes/products and successfully complete a project. In line with Thomas (2000), the implementation of the project is scaffolded, as students work towards three milestones, each with specific feedback designed to provide information that feeds forward into future work opportunities (Duncan 2007; Hounsell 2007).

The first group product was an event feasibility plan, whereby students had to conduct research and gather evidence regarding whether their proposed event is actually financially and organisationally feasible to implement. The second group product was the actual planning, organising and running of the event. The events management process provided students with opportunities for gathering new experiences: promoting their event on local radio, negotiating corporate sponsorships and professional networking in a real-world context. The event aimed to provide students with feelings of contribution and a sense of reward, as all profits were donated to local charities. The third and final group product was a (reflective) written report about the planning, organising and running of the event.

The teaching process took the form of setting out the parameters of the event task and was then a 'hands-off' supportive role during the main part of the module. In line with recent research findings of how teachers can provide sufficient support and autonomy at the same time (Jang et al. 2010; Rienties et al. 2012; Rienties and Townsend 2012), students had a substantial degree of autonomy and choice in this module. In addition, the groups receive support from the teacher to refine their project proposal/plan, think through and refine their plan; guidance in encounters with internal and external stakeholders; guidance or support in relation to interpersonal relationships; parameters of the project; university policy; and ethics. The module provided students with an opportunity to learn about working with others. As such, the pedagogical approach adopted for the EOM module may be best described as project-based learning. In project-based learning, learning is organised around a project involving '…complex tasks, based upon challenging questions or problems, that involve students in design, problem-solving, decision-making, or investigating activities; give students the opportunity to work relatively autonomously over extended periods of time, and culminate in realistic products or presentations' (Thomas 2000, p. 1).

Redesign in 2010: Increased Group Size and Summative Peer Assessment

The success of event management programme and subsequent EOM module attracted a large group of 36 students in 2010. Group sizes had to be increased from four students to eight students as the number of event slots and venues available is limited. That is, with a class of 36 students, a group size of four would imply nine project/events to be organised in the last 2 weeks of the module, which for logistical reasons and time from the teacher (events were mostly run during the evening) was

not feasible. With a group size of eight, only four events venues had to be found for all groups to organise and implement an event/project.

Increasing the group size would allow groups to share more ideas amongst students, as well as more opportunities to develop a large(r) and more prestigious event. At the same time, finding agreement between students in larger groups may become more difficult, free-riding may be more likely and the potential of misunderstandings, personal and emotional issues and conflicts between group members may become more likely. Gallego and Casanueva (2009) argue that implementing small-group methods like problem-based learning (or project-based learning) is difficult when the cohort size reaches more than 30 students. In a quasi-experimental design, Gallego and Casanueva (2009) proved that PBL can work even if cohorts of 200+ students and provides a similar learning experience as traditional lectures, but with a significantly better academic performance of students following PBL. In fact, several researchers have found conflicting findings of the effects of increasing group sizes on learning processes. For example, Schellens and Valcke (2006) found that larger group sizes led to less knowledge construction. Lowry et al. (2006) also found that group size negatively influenced the quality of communication, although ICT was found to soften the negative impact of increased group size on communication. Caspi et al. (2003) found no significant difference in the amount of contributions to discourse based upon the size of the group in a comparison amongst 47 online courses. Finally, Hew and Cheung (2010) found a significantly positive relationship between group size and the frequency of higher-level knowledge construction occurrences.

To the teacher, it seemed both obvious and imperative to introduce peer assessment to address the issue of larger group sizes and the inherent conflict of 'contribution of work' within the group. Previously when group sizes had been three or four, an evaluation of contribution was either decided by the group as being equal or, if not, marks were attributed following a group meeting, and discussion with the teacher and all students had to agree the marks awarded to each group member. With group sizes of eight students, this mediation was no longer practical. According to Dochy et al. (1999, p. 338), peer ranking 'consists of having group members rank all of the others from best to worst on one or more factors'. Students at the end of the module peer ranked the performance of their peers during the final meeting, whereby 10 % of the final grade was determined by peer ranking. Students' satisfaction scores as measured by Module Evaluation Questionnaires dropped substantially (as is described in more detail in the "Results" section). In particular the necessity to rank peers, with whom students had worked successfully during the project, seemed to provide strong negative emotional responses for some students.

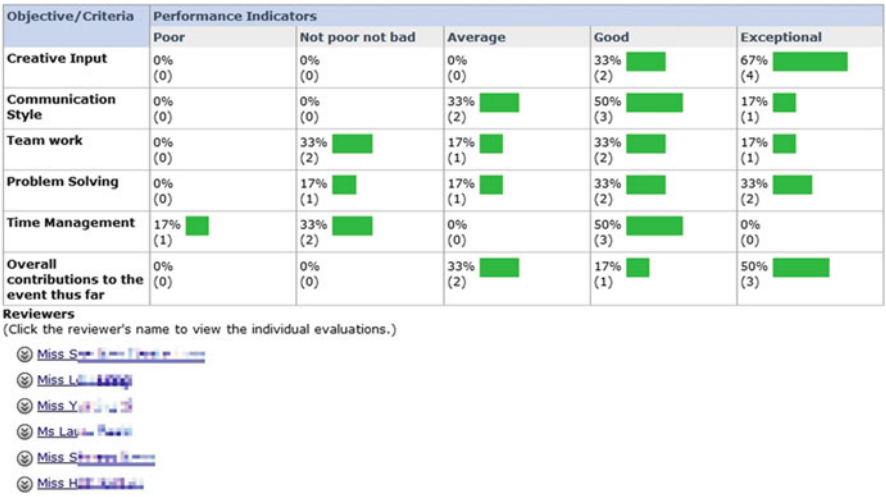
Redesign in 2011: Continuous Self-Reflection and Peer Assessment

The number of students enrolled on the module doubled (again) from 36 to 70 in 2011, primarily due to the fact that the postgraduate master programme event management attracted more students. Given the doubled class size (or a fivefold increase

in comparison to 2009), a retired teacher who had designed and taught the module in 2004–2009 returned to teach and support half of the 70 students. Based upon the experiences of 2010, the two teachers, with support from an instructional designer, redesigned the module and in particular the way the peer assessment was implemented. An innovative learning environment was redesigned whereby more emphasis was placed on learning with and from peers in a blended learning context. In line with recommendations of Dochy et al. (1999) and Biggs and Tang's idea of constructive alignment, an integrative assessment strategy was implemented that aimed to enhance students' cognitive, meta-cognitive, social competences and affective dispositions. Dochy et al. (1999) refer to the notion of co-assessment, whereby teachers and students participate in the assessment process. That is, a combination of self-reflection, peer assessment and teacher assessment in both formative and summative ways was established (as described below).

Initial training in the use of the ICT tool was provided during the first week. During the training, the students together with the teachers and instructional designer discussed in an open setting the potential advantages and challenges of working in groups in a project and using self-reflection and peer assessment. Afterwards, every 2–3 weeks, each member of the group reflected upon his/her individual role within the group using the journal entry tool of WebCT 3 days before the next class meeting, which is similar to a blog entry on a weblog. Two days before the next class meeting, each student conducted a peer rating of each member within their group. In contrast to typical applications of peer assessment, whereby students provide an overall mark, in the 2011 design students provided peer feedback on six categories (i.e. creative input, cooperation within the group, group work, problem solving, keeping schedule, effectiveness of performance for event) on a Likert response scale of 1–5. The six categories were chosen by the teachers as key process indicators for effective implementation of the project based upon their experience of implementing the EOM module in the last 8 years in combination with research on effective team learning (Lowry et al. 2006; Schellens and Valcke 2006; Van den Bossche et al. 2006). The team learning model specifies when and how teams in collaborative learning environments engage in building and maintaining mutually shared cognition, also referred to as a shared mental model (Van den Bossche et al. 2006). Research on shared mental models has highlighted that teams who develop a shared mental model perform at a superior level when compared to other teams (Van den Bossche et al. 2006).

For each category an extensive rubric was given that outlines what it means to be, for example, an excellent contributor to creative input. The students could use this rubric to provide feedback and also interpret feedback received from their peers. For example, in Fig. 7.1 student John received excellent peer feedback on creative input, but his teammates differed in opinion with regard to whether his teamwork and problem-solving skills were appropriate. Furthermore, three out of six students indicated that they were not satisfied about his time management skills, although his overall contributions to the project were appropriate. Students were also encouraged to provide open comments. Finally, on the day of the class meeting, students together with the teachers discussed the results of the self-reflection and peer assessment as



Objective/Criteria	Performance Indicators				
	Poor	Not poor not bad	Average	Good	Exceptional
Creative Input	0% (0)	0% (0)	0% (0)	33% (2)	67% (4)
Communication Style	0% (0)	0% (0)	33% (2)	50% (3)	17% (1)
Team work	0% (0)	33% (2)	17% (1)	33% (2)	17% (1)
Problem Solving	0% (0)	17% (1)	17% (1)	33% (2)	33% (2)
Time Management	17% (1)	33% (2)	0% (0)	50% (3)	0% (0)
Overall contributions to the event thus far	0% (0)	0% (0)	33% (2)	17% (1)	50% (3)

Reviewers
(Click the reviewer's name to view the individual evaluations.)

Miss S…
Miss L…
Miss Y…
Ms La…
Miss S…
Miss H…

Fig. 7.1 Screenshot of peer evaluation of student John

well as the general progress of the project. In total five peer ratings were conducted during 14 weeks. During the first three ratings, the results of the peer rating, the feedback given, as well as the name of the student giving the feedback were visible for the student receiving feedback. In the two follow-up peer ratings, feedback was provided anonymously to the respective student only. The first four peer evaluations were formative, primarily to encourage individual reflection and learning and facilitation of the group processes. The final peer rating was summative and implemented after the event was completed, which constituted 25% of the final grade.

Research Questions

Based upon the theoretical framework outlined above, we expected that students in the 2011 redesign would be more satisfied with the learning environment, the peer assessment and support given by the teachers. Therefore, the following research questions were formulated:

1. To what extent does a redesign with continuous self-reflection and (formative) peer assessment lead to higher student satisfaction scores in comparison to a design with summative peer assessment?

Afterwards, we would like to understand how students in the 2011 design perceived the innovative assessment strategy. Most students were unfamiliar with self-reflection and peer assessment tools, whereby a large body of research has shown that students' expectations need to be carefully managed (Carless 2009;

Dochy et al. 1999; Van Zundert et al. 2010). For example, in a cross-design study of four pedagogical methods of the same modular content, Struyven et al. (2011) found that students preferred to work with the traditional lecture model rather than with more innovative student-centred methods. They argue that students might resist more innovative collaborative learning methods when the teaching methods are completely different from previous modules and institutional culture.

2. To what extent do students find it useful to continuously self-reflect on their contributions?

Finally, given the increased class and group size, the teachers had less time per group/student available to provide detailed feedback and personal development in comparison to 2003–2009. The ranked peer assessment in 2010 was perceived very negatively by students, but we want to explore whether students learned from the continuous self-reflection and peer assessment in 2011.

3. To what extent do students learn from peer feedback?

Method

Participants in 2010–2011

In total 36 and 70 participants were randomly assigned to groups of seven to nine students in 2010–2011, respectively. The 13 groups had an average of 7.84 members (SD = 0.55). The average age was 23 years and 85% of the learners were female. The student population was comparable to most other courses at this business school, whereby more than half of the students were from overseas, primarily from Asia and Europe.

Instruments

Student Satisfaction of Course Design, Teacher and Learning

As a measure of student satisfaction, the Module Evaluation Questionnaire (MEQ), which is a questionnaire developed in-house, was utilised. This questionnaire consists of five questions about the overall quality of the module (aims of intended learning outcomes, teaching quality, feedback) and three questions about the quality of (each) the teacher (communication, organisation, support) on a Likert response scale of 1 (=Totally disagree) to 5 (=Totally Agree). Furthermore, two open question boxes are provided for students to share their thoughts about the best elements of the module and what can be improved. The response rate for 2010 was 25%, while for 2011 was 79%.

Table 7.1 Measures: questionnaires, item examples and Cronbach's alphas

Scale	*N* items	Exemplary item	α
Prior experience with self-reflection and peer assessment	2	Before this module, I already had experience with peer evaluations tools like the one used in this module	.57
Self-reflection	3	I think it useful to post my individual self-reflections (before every peer evaluation) in the virtual learning environment	.66
Providing peer feedback	3	I have learned a lot from providing feedback to my group members	.66
Receiving peer feedback	3	I like it that my group members provide feedback on my contributions using the peer evaluation tool	.67
Anonymous feedback	3	I would have learned more from the feedback from my group members if feedback is given anonymous	.82
Team cohesion (from Van den Bossche et al. 2006)	3	I get along with members of my team	.84
Team potential (from Van den Bossche et al. 2006)	3	This team believes that no assignment is too tough for us	.80

Satisfaction with Peer Assessment Questionnaire (SPAQ)

The SPAQ questionnaire is an in-house developed instrument to verify the underlying dynamics of peer assessment in the redesign in 2011. Based upon the above literature review, the instrument consists of seven categories leading to 20 items on a Likert response scale of 1 (=Totally disagree) to 5 (=Totally Agree). As illustrated in Table 7.1, except for prior experience, each category consisted of at least three items, whereby at least one item is negatively formulated in order to enhance reliability of the questionnaire. The initial questionnaire was distributed to five independent experts in order to test the constructs and validity of the questionnaire, and final iterations were made. Afterwards, the items were randomly sequenced. The students were questioned at the end of the module (response rate = 81 %). The reliability for prior experience was moderate, primarily due to the fact that there are only two items. The other six scales indicated reasonable to good reliability (see Table 7.1). Finally, two open question boxes were provided for students to share their thoughts about the main advantage and disadvantage of peer assessment.

Results

Effects of Redesign on Learning Satisfaction

In Table 7.2, the learning satisfaction scores of the redesign in 2010 and 2011 are illustrated. In the initial redesign in 2010 with summative peer assessment, all except one item is below the neutral value of 3, indicating that students are not

Table 7.2 Comparison of redesign on learning satisfaction 2010–2011

	2010		2011		
	M	SD	*M*	SD	*T*
The aims were clear	2.89	1.54	4.11	0.77	3.722**
The teaching helped me to learn	2.33	1.00	3.96	0.91	4.906**
I received useful feedback	2.67	1.12	4.20	0.76	5.223**
It was important to me to attend consistently and work hard	3.11	1.36	4.22	0.86	3.273**
Overall this was a good learning experience	2.78	0.97	4.34	0.73	5.637**
Ability (of the lecturer) to communicate clearly	2.00	0.87	3.73	0.91	5.301**
Organisation of the material	2.44	1.01	3.60	0.83	3.755**
I have received sufficient advice and support with my studies from the teacher	2.00	0.93	3.63	1.09	4.023**

Note: Independent sample *T*-test, using a Likert response scale of 1 (strongly disagree) to 5 (strongly agree). The scores of the last three items are from the teacher who taught in both designs only
**p < .01

satisfied with the learning experience. In particular, the support of the teacher is rated poorly. With respect to the first research question, the learning satisfaction scores in 2011 improve significantly for all items at a 1 % confidence level in the redesign with continuous self-reflection and peer assessment. In particular, 91 % of the students indicate that the received feedback is useful, which is in stark contrast to 2010 when only 22 % of the students are positive. Similarly, 92 % of the students in 2011 indicate to have a good learning experience, while only 22 % of the students in 2010 are positive. Both teachers received positive satisfaction scores, although the (returned) second teacher received significantly higher satisfaction scores (in the order of 0.69–0.99). The MEQ scores of EOM are in line with MEQ scores across 54 modules in hospitality management, with an average overall score of 4.2–4.3.

Follow-up analysis of emergent themes in the open text boxes seems to indicate that students in 2010 and 2011 are positive about the ability to put the theory of hospitality management into practice by planning, running and evaluating a real-world event. In particular, the experience of creating and organising an event is considered to be an important learning opportunity that is relevant for the students' future:

> It supplies a good chance to put theories into practice and also a good chance to help each classmate to know each other (Student A 2010).
>
> Students get hands-on experience on running an event. (Student B 2010)
>
> The experience of doing the event alone is a very good thing, because through the experience I gained a lot of knowledge and learned a lot of valuable skills. (Student 1 2011)
>
> It was very interesting to put up an event from scratch. It wasn't easy though. But very challenging. Learning how much things need to be taken into consideration to plan was essential. Having to plan a real event will put us on the ground on what to expect from real world events in the future career. (Student 2 2011)

> [The tutor] was wonderful to work with. He really seemed to listen to students and really tried to work with us. It was great to get real experience in the event industry. (Student 3 2011)

At the same time, students in both designs have expressed their concerns about the assessment strategy. In particular, students seem to prefer to have more weight attached to running the actual event rather than the reflection report. Furthermore, students in both designs prefer to have more explicit support and guidance from the teachers. In particular in 2011 students seem to indicate that the way the teachers applied the group division should be reconsidered. Finally, some students are negative about the peer assessment system and the ICT skills of the teachers:

> Support must be supplied in time and sufficient. I think may be the report can be treated as the most important tool to judge the performances. (Student A 2010)
>
> Guidance throughout the planning. More weight in the marks given to the actual event. Verification of what is actually written in the report by all team members. (Student B 2010)
>
> Maybe to facilitate the events more and coordinate with different stakeholders maybe putting some help in terms of budgeting another thing you should to consider is to take into consideration the event itself since Professor came and noticed it, it would be better to grade the actual event not the report. (Student 2 2011)
>
> The peer review system. WebCT was a mess! Better skills of WebCT for the professors. Review how and when the dates are chosen for events. Rethink how groups are chosen. (Student 3 2011)
>
> More communication between professors and students. Reason – sometimes, students get confused about things in the module and event, they need more assistance and support. (Student 4 2011)
>
> The group for the event should not be divided by teachers, I believe it would be better if we could choose group members by yourself. (Student 5 2011)

Satisfaction with Continuous Self-Reflection and Peer Assessment

In Table 7.3, the descriptive statistics of the satisfaction with peer assessment questionnaire (SPAQ) as well as their correlations are illustrated. The majority (78 %) of students had limited or no prior experience of self-reflection and peer assessment tools before this module. Furthermore, 63 % of the students are (moderately) positive about the usefulness of self-reflection for learning. Forty-one percent of the students are (moderately) positive about learning from feedback provision to their peers. Receiving and learning from peer feedback is slightly more valued, namely, by 54 % of the students. In other words, these results seem to indicate that students are only moderately positive about the innovative assessment strategy. In fact, 18 % of the students indicated that they do not learn from peer feedback provided by their group members. Furthermore, 65 % of the students have indicated that they prefer that peer assessments should be conducted anonymously. Finally, students are mostly positive about the team cohesion and team potential.

Table 7.3 Descriptive statistics and correlation matrix of SPAQ

		Mean	SD	1	2	3	4	5	6
1	Prior experience with self-reflection and peer assessment	2.61	0.78						
2	Self-reflection	3.27	0.64	.17					
3	Providing peer feedback	3.21	0.61	.02	.51**				
4	Receiving peer feedback	3.08	0.58	.14	.60**	.77**			
5	Anonymous feedback	3.85	0.80	−.14	.17	.03	−.03		
6	Team cohesion	4.00	0.80	−.01	.12	.53**	.41**	.14	
7	Team potential	4.00	0.64	.04	.27*	.39**	.35**	.12	.77**

**Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed)

Follow-up correlation analyses in Table 7.3 indicate that there is no significant correlation between prior experience and any of the other six scales. In other words, having limited experience of peer assessment, which is the case for most participants, does not hamper students to learn from self-reflection and peer assessment. With respect to the second research question, a positive correlation is found between self-reflection and providing and receiving peer feedback (r = .60), indicating that students who find it useful to post self-reflections to their peer group members are also more positive about feedback provided to and received from peers. Furthermore, a positive correlation between self-reflection and team potential (r = .27) indicates that students who are positive about the merits of self-reflection are also more positive about the potentials of the group to succeed. We caution the reader not to confuse correlation with causality.

With respect to the third research question, the ease at which students provide feedback to peers is strongly correlated to learning from the peer feedback. Providing peer feedback is positively correlated with team potential (r = .27). Furthermore, receiving peer feedback is strongly positively correlated with team cohesion (r = .53) and team potential (r = .39), indicating that in groups where there is cohesion and belief in the potential of the group, students feel more positive about providing and receiving peer feedback. Although as indicated above a majority of students seem to have a preference for anonymous peer assessment, we find no significant correlations with any of the variables.

Afterwards, a separate correlation analysis of the SPAQ variables on an aggregate group level indicates a moderately strong group effect (not illustrated). That is, there is a positive correlation (r = .73) of self-reflection with receiving peer feedback, indicating that groups who found it useful to share self-reflections also learned more from receiving peer feedback. Furthermore, there are strong correlations of providing peer feedback with receiving peer feedback (r = .80), team cohesion (r = .69) and team potential (r = .82). In other words, in groups that have developed a strong cohesion and have trust in the potential of the group, or in the words of Van den Bossche et al. (2006), have developed a shared mental model, learned a lot from providing peer feedback to other members of the group. This also seems to be

related to findings by Rusman et al. (2009), who found that groups need to develop sufficient trust to effectively work together in groups. Receiving peer feedback was not significantly correlated with team cohesion and team potential, although the sample size on a group level might be restrictive, as the rhos are .32 and .47. Possibly with a larger cohort with more teams, also receiving peer feedback may be related with the shared mental model of teams.

Follow-up emergent themes analyses of the open text boxes seem to indicate that students are quite positive about the use of frequent self-reflection and peer assessment. For example, student 6 sees the peer assessment as an opportunity to improve his own learning as well as to enhance the overall performance of the group and the project. Student 7 indicates that peer assessment is more realistic (than teacher assessment) as the students in the group work closely together during the project, but at the same time student 7 indicates that peer assessments are more realistic if they are conducted anonymously:

> It helps to gain better understanding of the project. It is valuable for future improvement and we can learn from our mistakes. E.g. to learn from the feedback what I haven't done well and try to improve that part in the future. Such as communication with members and negotiation with others (suppliers etc.). (Student 6 2011)
>
> More realistic because they are the closest people to work with you, they know anything you actually do. (Specific.) Objective opinions will be given by anonymous. Reflections of true situation and the problem so no need to put the name. (Student 7 2011)

Although students in general are positive about the use of frequent peer assessment, there are also some tensions, both on a social and affective level:

> It can't truly reflect the real situation all the time, due to several reasons, or not willing to share idea. E.G. People may forgot details, thus the feedback from people who took the peer evaluation may not 100 % represent their real thoughts. (Student 6 2011)
>
> Disadvantage; easy to get disappointed if achieved low marks. Unfair judgement of conflicts across between group mates. (Student 7 2011)
>
> I don't think peer evaluation is precise tool in measuring the performance, as their types of relations other than academic might have been involved during the work process. For example, I wasn't friends with people I worked at start with and our group leader in particular and if I had difficulties during my work, I was the one who got more pressured comparing to the people she was friends with. (Student 8 2011)

Discussion

With an increasing number of students starting a postgraduate business programme, teachers have to develop and implement effective teaching and learning methods that provide a personalised learning experience for each student, albeit with less time per student available. In this chapter, in an authentic setting we explored whether providing students with more responsibility in providing and receiving peer feedback from group members would nurture a powerful learning environment, despite a doubling of the class size. Based upon a call by Van Zundert et al. (2010) for more formative peer assessment and feedback that goes beyond marking and

grading, this chapter compared two consecutive redesigns of a project-based learning module in hospitality management, whereby self-reflection and peer assessment played a substantial role for coping with increased class sizes. The initial design with summative peer ranking at the end of the module was not considered by students to be a successful learning experience. In particular, the support of the teacher in creating and implementing the project was rated poorly.

Based upon the low student satisfaction scores in 2010, the module was further redesigned in 2011, while at the same time having to deal with twice as many students as in 2010. An innovative blended learning environment was implemented whereby a combination of continuous self-reflection, peer assessment and teacher assessment in both formative and summative ways was established.

Research Question One

With respect to the first research question that focused on the extent to which the implementation of continuous self-reflection and formative peer assessment led to an improvement in student satisfaction scores, the findings were largely positive with regard to students' learning satisfaction, peer feedback, learning experience and teacher support. The learning satisfaction scores improved significantly in the redesign of 2011 with the implementation of continuous self-reflection and formative peer assessment when compared with the 2010 cohort where only summative peer assessment was used. Nearly all of the students indicated that the received peer feedback was useful and that they had a good learning experience. Despite a doubling of class size, students also perceived the learning experience and support received from their teachers more positively in 2011 when compared to 2010, which seems to indicate that the 2011 redesign with continuous self-reflection and peer assessment is a successful improvement of the 2010 design. It is arguable that this is due to the authentic nature of the assessment design (Belei et al. 2009; Thomas 2000) and the opportunity for students to not only gain a better understanding of the assessment requirements (Rust et al. 2003) through engagement with self-reflection and peer assessment but also through the opportunity to use the feedback to develop as learners, or feedforward (Duncan 2007; Hounsell 2007).

Few students had previous experience of self-reflection and peer assessment, which Sambell and McDowell (1998) argue and lead students to 'filter' their experiences of innovative assessment through their previous experiences of traditional forms of assessment, such as the examination. Due to what has been referred to as the 'backwash effect' of assessment, students will also tend to associate assessment with grades which can serve to negate the formative intentions of innovative assessment (Price et al. 2010). While the findings from the current study indicate that students' limited experience of self-reflection and peer assessment did not hamper their learning, it is possible that the moderately positive ratings that focused solely on the students' experiences of the innovative assessment strategy were due to a

focus on grades rather than development as learners. An additional explanation may lie with the blended approach that the redesign implemented.

Not all students were able to effectively learn with ICT, as is also highlighted in previous research (Luppicini 2007; Tempelaar et al. 2009, 2012). The emergent themes from the open text boxes indicate that students expect a technology that is stable and reliable, while at the same time having teachers who are able to effectively use technology in and outside the classroom (Alvarez et al. 2009; Rienties and Townsend 2012). We caution readers to jump to conclusions that peer ranking at the end of a module always negatively affects the learning experience, while continuous assessment 'automatically' leads to satisfied students. In support of (Carless 2009; Dochy et al. 1999; Van Zundert et al. 2010) findings, our results highlight that managing the expectations of students concerning innovative assessment strategies need to be carefully planned and explained by business teachers at the start of a module.

When comparing the (relative) success of the redesign in 2011–2010, the relatively low response rate of the Module Evaluation Questionnaire in 2010 should be noted. Nevertheless, the learning satisfaction scores of the redesign in 2011 were similar to 54 other modules in the postgraduate hospitality programme, indicating that the redesign was moderately successful. Distinguishing the effects of the redesigned learning environment from the effects of the returning teacher is unfortunately not feasible.

Research Question Two

With respect to the second research question that focused on the extent to which students find continuous self-reflection useful, the results from the Student Peer Assessment Questionnaire indicated that students in general were moderately positive about the innovative assessment strategy, particularly in relation to perceptions of providing and receiving peer feedback and their teams' potential for success.

Over half of the students thought that self-reflection for learning was useful. In support of Rust et al.'s (2003) findings, students indicated that the continuous self-reflection helped them to gain a better understanding of how to successfully create and implement a profitable project and learn in a safe environment from their mistakes. In other words, the formative nature of the assessment not only provided students with an insight into the assessment requirements and processes but also allowed them the opportunity to feed this knowledge forward into the development of their own work (Duncan 2007; Hounsell 2007).

Students who were positive about the self-reflection experience were also more positive about providing and receiving peer feedback and the potential of the team to run a successful event. Follow-up correlation analyses on a group level provide some support of the notion that groups who were more cohesive and more positive about their group potential were also more positive about the merits of using self-reflection. This might indicate that when teams have built a safe environment to

share and learn from each other in line with the shared mental model of Van den Bossche et al. (2006), they are also more positive about the benefits of self-reflection. This would also support Dochy et al.'s (1999) findings that a combination of assessment methods such as self-reflection as part of self-assessment and peer assessment can serve to increase student confidence in their potential for success, as well as increasing student satisfaction as found in relation to research question one. Topping's (1998) conclusion that such innovative assessment strategies are best suited to authentic learning contexts may also go some way towards explaining this positive correlation. At the same time, the work done by Carless and colleagues (Carless 2009; Carless et al. 2010) indicate that developing trust about the assessment strategy between learners within a team and with the teacher is crucial. Further research is necessary to understand the causality of this relation.

Given the relatively limited number of groups and number of students present in our setting, conducting multilevel analyses was not a feasible option. Further research should address how teams can effectively build a safe environment for students to learn from self-reflection and peer assessment and what teachers can do to encourage self-reflection.

Research Question Three

With respect to the third research question that focused on the extent to which students learn from peer feedback, the findings were less positive. Less than half of the students were positive about learning from peer feedback provision to their peers, while a small majority of students indicated to have learned from the received peer feedback.

While a large body of research promotes the benefits of peer assessment, including the promotion of dialogic feedback (Carless et al. 2010; Nicol 2010) and improved learning performance (Van Zundert et al. 2010), in contrast to Williams (1992) we found that students in our setting were not wholly satisfied with continuous peer assessment. The ease with which students provided feedback to peers was strongly correlated to learning from the peer feedback received. Therefore, it would appear essential that academic staff wishing to implement such an assessment strategy must first spend time discussing the rationale for such change so that their students approach the assessment with a positive attitude. Furthermore, providing and receiving peer feedback were both positively correlated with team cohesion and team potential, indicating that in groups where a shared mental model was established, students felt more positive about providing and receiving peer feedback. An explanation of the relatively low satisfaction scores of peer assessment might be that most students preferred to conduct the continuous peer assessment in an anonymous format. Some students indicated that their peers did not provide fully honest feedback when their names were given by the ICT system. Although students seemed to prefer anonymous peer assessment, we found no significant correlations with any of the other variables, indicating that anonymity as such was not correlated with learning from feedback

and establishing trust and a shared mental model. An alternative explanation of the relatively low satisfaction with peer assessment might be that most students were unfamiliar with peer assessment before this module and so, as Sambell and McDowell (1998) have pointed out, might filter their experiences of this new form of assessment against their prior experiences of more traditional forms of assessment for which their role is passive. This may have caused the students to associate the assessment with grades, thereby negating the formative intentions of the peer assessment (Price et al. 2010).

Overall, we can conclude that providing continuous self-reflection and formative peer assessment opportunities in project-based learning seems to be a moderately powerful method that can encourage students to learn from discussions with peers about the progress of an authentic project, as well as providing an insight into the assessment system. It should be noted, however, that student perceptions of the innovative assessment system being implemented are key to encouraging enhanced student satisfaction and performance. It is therefore fundamental that staff intending to implement a new assessment strategy must first outline their rationale for doing so and the intended positive impact on student understanding and learning in view of the correlation between student perceptions and openness to learning from themselves and their peers. At the same time, further fine-tuning of the feedback tool is needed in order to fully allow students to benefit from the continuous feedback from their peers and the teachers.

Although it is technically feasible to conduct five self-reflection and peer assessment exercises with 70 students in nine groups, an important lesson learned for the teachers is that the current configuration of WebCT provided a tough challenge for teachers to provide timely feedback. That is, more than 12,000 feedback entries were stored in WebCT, whereby an easy ‘dashboard overview’ of overall progress of an individual student or team was missing. In other words, in the future more attention needs to be paid towards providing more training and feedback to students as well as making peer assessment reports more ‘teacher friendly’. The social and affective levels of such assessment strategies are also an important avenue for future research to pursue.

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Part III
Organisational Learning

Chapter 8
Perspectives and Practice: Facilitating the Learning of the Twenty-First-Century Manager

Kristen Reid, Sarah Robinson, and Paul Quintas

Introduction

The twenty-first-century economic and business environments are intensifying the need for managers to both possess a wide range of skills and knowledge and to develop their capabilities to apply and continuously improve these. Set within the context of today's interconnected world, contemporary management requires international perspectives coupled with practical skills that support the development of interpersonal relationships and increasingly overlapping social and professional networks (Ettlinger 2003). This evolving environment requires management education to become more relevant to students who are managing the complexity and uncertainty of today's socioeconomic contexts. Consideration of *how* MBA students learn is influencing teaching practices as much as the focus on *what* they need to learn.

A recent curriculum redesign for the Open University Business School's Masters in Business Administration (MBA) presented an opportunity to reflect on teaching practices to help students make the connection between theory and practice and to prepare them with the skills needed to meet unpredictable twenty-first-century challenges. The MBA is offered in the Open University's 'supported open learning' model of distance learning (McAndrew and Weller 2005), which provides a mix of self-directed learning through OU-published and other course materials (online and offline) and face-to-face and online interaction with locally based Associate Lecturers (ALs) each having a group of about 15 module students. This approach allows the school to offer its learning opportunities at scale and worldwide, with 30,000-plus students based in 107 countries in 2009.

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P. Van den Bossche et al. (eds.), *Facilitating Learning in the 21st Century: Leading through Technology, Diversity and Authenticity*, Advances in Business Education and Training 5, DOI 10.1007/978-94-007-6137-7_8,

Most of the MBA's students are working and employed in management roles. Similarly, in large part, OU MBA ALs are practitioners themselves, employed in a wide range of management and consultant positions in addition to their part-time roles with the OU. It is important to emphasise that the AL role is essentially one of facilitation of student learning – they are not there to 'lecture', and so the AL title is something of a misnomer. ALs have always played a crucial role in the facilitated learning journey of OU students and in ensuring critical engagement with ideas in the distance learning environment (Alexander 1998).

This chapter reports on one part of a larger case study of the module's redesign, which studied the changing nature of teaching in distance education – both in curriculum materials and in facilitating learning. This chapter first discusses the research questions and background to the case. It then outlines the theory providing the conceptual framework for the enquiry with a particular focus on the development of communities of practice and collaborative learning. This is followed by a brief discussion of the research methods used. The chapter then presents the results of the analysis, discusses the limitations of the research and suggests possible steps for further enquiry.

Research Questions and Background of the Case

The guiding research questions for the case study were the following: 'What is the role of teaching?' and 'How can we improve the integration of practice-based learning?' as key to responding to criticisms that MBA qualifications are overly functionalistic (Latham et al. 2004) and do not meet the needs of practising managers (Leavitt 1989; Mintzberg and Gosling 2002; Pfeffer and Fong 2002; Mintzberg 2004). The current redesign of the MBA (and this module, specifically) was the product of faculty discussions regarding the importance of practice-based learning in management education. Practice-based learning approaches move beyond what Holmberg (1981, in Shearer 2003, p. 277) called a 'guided didactic conversation' used in traditional distance learning pedagogy. The student's context becomes a primary focus for learning: for the part-time MBA student, it is their work environment that provides the central focus. Therefore, learning is no longer simply a didactic conversation but is a facilitated dialogue between theory and practice.

The design of the content and facilitation strategy for the new module assumed a different set of dialogues that would be needed (Fenton-O'Creevy et al. 2006) – dialogues that might change the role of the design team (as conveyors of 'knowledge' and content) and the ALs (as facilitators of the learning process). The case study's researchers sought to understand the role of ALs in facilitating the learning process and to evaluate how professional development opportunities helped to build their skills in facilitating practice-based learning.

As part of this development process, a series of workshops were held on 'critical engagement'. Critical engagement refers to '[a] description…for a process of interacting with ideas in MBA modules in which students 'engage' their brains/

thinking with both course theory and their professional practice' (Cameron 2009, pp. 1–2). The workshops brought together 12 ALs to reflect on their pedagogical practices, assessment and module design in order to better support the 'critical engagement' of their MBA students (Cameron and Robinson 2008; Cameron 2009, 2010). One aspect of the workshops focused on the teaching practices specific to the stage 1 module, with particular attention paid to how learning might be facilitated for entry-level MBA students.

Development of the module began in earnest in 2009 for a module launch in November 2010, and a key challenge for the development team was to ensure that the lessons learned in the critical engagement workshops were incorporated into the new module's pedagogical approach. Resources were developed by ALs for their colleagues, which included a guide for ALs on critical engagement and its facilitation (Bunnell et al. 2009). Additionally, members of the AL community advised on the module's pedagogy, wrote guidance specific to facilitating learning on the module and participated in a 2-day AL briefing before the module started.

Of particular importance was the focus on facilitation of learning – how to step back and let the theory-practice dialogue emerge between the student and their practice settings. As part of ongoing support for ALs in this role, the module hosts an AL-moderated online forum where they can discuss any challenges and successes and ask for guidance from their colleagues and from the module's writers. Online forums have been an important part of the OU's AL support system for two decades. For example, Quintas and Fowle (2002) discussed their use in a then-new MBA module, *Managing Knowledge*, as an emerging community of practice. This use has since evolved school-wide into a more formal mechanism for providing such support. Although communities of practice are usually defined as informal and emergent, the support mechanisms for their development can be intentional (Wenger 1998/2007). Online AL forums (and indeed the forums for students) are designed to provide places for such emergence.

Theoretical Framework for the Study

Lave and Wenger's (1991) ideas on the emerging communities of practice as means of disseminating and codifying knowledge are well established in the literature. Previous research on OU Business School courses has used the community of practice model as a way of managing knowledge amongst students and ALs (e.g. Quintas and Fowle 2002; Little et al. 2003). People in these emergent systems form common understandings of norms and meaning and develop resources to disseminate this developing knowledge and guide further social learning (Wenger 1998/2007). The communities of practice model focuses on the social and relational aspects of learning and the negotiation of meaning that thus evolves from these interactions.

However, Roberts' (2006) summary of various critiques of the model surfaces the issue of power and control and the concern that not all members of a community of practice will be able to (or feel able to) participate as fully as others. These issues,

in their turn, can influence the degree of trust amongst community members and the limits of innovation that can be engendered by the community. These are important criticisms that have particular relevance to the emergent community of practice discussed in this chapter.

The ALs facilitating the module are all academically qualified but come from a wide range of professional backgrounds, some with academic teaching experience, some without, some with greater knowledge of the different subject areas (e.g. finance and accounting) and some with greater experience of tutoring with the OU. For this reason, this diversity (in experience, in power, etc.) within the group provides a fruitful forum that not only exchanges and shares practices for the purposes of codifying knowledge and facilitating innovative practice but also allows for the critiques of practice that may not be expected to emerge from a typical 'community of practice' model. This is where collaborative learning can be a useful way of better understanding the group interactions.

Collaborative and other similar approaches to social learning pedagogies emerged from several different sources including problem-centred approaches, cooperative learning models, Harvard case study analysis and peer teaching (Smith and MacGregor 1992). Similar collaborative learning principles formed an important part of Vygotsky's approach to cultural learning (1978), which was later expanded by Bruner (1985) in reference to peer support in problem-solving contexts.

However, it is Bruffee's (1984) examination of Richard Rorty's (1979 in Bruffee 1984) discussion of 'normal' and 'abnormal discourse' that appreciates the diversity within an emergent 'community of practice'. 'Normal discourse' is that which is governed by a set of negotiated norms for interaction (e.g. what is appropriate for discussion and how discussion should be made). Such discourse leads to a process of 'socially justifying beliefs':

> We socially justify belief when we explain to others why one way of understanding how the world hangs together seems to us preferable to other ways of understanding it. We establish knowledge or justify belief collaboratively by challenging each other's biases and presuppositions; by negotiating collectively toward new paradigms of perception, thought, feeling, and expression; and by joining larger, more experienced communities of knowledgeable peers through assenting to those communities' interests, values, language, and paradigms of perception and thought. (Bruffee 1984, p. 646)

However, Bruffee argued that Rorty's 'abnormal discourse' provided the potential to develop a conversation beyond the given norms – thus leading the way toward continued innovation and learning:

> Abnormal discourse sniffs out stale, unproductive knowledge and challenges its authority, that is, the authority of the community which that knowledge constitutes. Its purpose, Rorty says, is to undermine "our reliance upon the knowledge we have gained" through normal discourse. We must occasionally undermine this reliance because normal discourse tends to "block the flow of conversation by presenting [itself] as offering the canonical vocabulary for discussion of a given topic" (1979, 386–387). (Bruffee 1984, p. 648)

Educators, Bruffee notes, must balance these two modes of learning – to 'perform as conservators *and* agents of change' (p. 650), and therefore educators must help students to develop – in their learning discourse – ways to conserve the knowledge

that has been gained and to critique it. In a similar way, the module's developers saw the AL's online forum as a way of encouraging both 'normal' discourse (to codify and share practice) and 'abnormal' discourse (to critique practice). It was hoped that in using the forum as a way to discuss and debate the innovative practices in the module (e.g. regarding how to facilitate the practice-based learning approaches) ALs would develop a shared understanding of the innovations and identify better practices (rather than 'best practices').

Methods of Enquiry

Case studies are useful tools for educational practitioners as they build 'a picture to help inform our practice or to see unexplored details of a case' (Creswell 1998, p. 95). This study employs an intrinsic case study (Stake 1995), i.e. the specific situation is of interest in its own right to one of the leaders of distance and blended learning development. However, lessons can also be drawn for curriculum development in other contexts, including face-to-face environments and other institutions using practice-based learning pedagogies. The unit of analysis for this case was the network of stakeholders involved in or influenced by the module's development process with these stakeholders providing key data and information for the enquiry. These data included a small set of semi-structured interviews with four ALs in leadership roles as well as data from a day-long feedback event with a larger group of 13 ALs, two focus groups held with the module's writers and design team, the authors' longitudinal reflections on the development process (e.g. Reid and Robinson 2011) and feedback from students following the end of the first year of the module.

The interviewed ALs were asked to discuss their learning and development through facilitating learning on the module and through their participation in the AL-dedicated forum. Summaries of feedback from a larger group of ALs during the feedback event were used to provide further perspectives of the AL teaching experience during the first year of the module. These data were analysed using a simple thematic analysis, which focuses on 'identifiable themes and patterns of living and/or behavior' (Aronson 1994, n.p.). The next section presents the analysis of these themes in the context of four pedagogical challenges in the module's design.

Facilitating Learning on the Module

The module's redesign and AL development focused on four areas:

1. Practice-based learning
2. Information discernment

3. Skill building in reflective practice
4. The mix of collaborative and independent learning approaches

The perspectives of the ALs in their learning are discussed below in reference to these four areas.

Practice-Based Learning and Reflective Practice

Student engagement with the interaction of theory and practice is central to their work on a year-long practice-based learning project (the evidence-based initiative or EBI), which allows them to critically engage with ideas in their practice context. Formerly, the EBI was a feature of the capstone module of the MBA, only. However, it became clear that students would benefit from greater preparation to undertake the final module and to engage in a theory-practice dialogue much earlier in the programme (Cameron 2009). With the integration of an EBI at the start of the students' MBA studies – albeit in an less intensive fashion than in the capstone module – ALs need to facilitate learning in EBI-related skills in research. These skills include understanding the use and critical analysis of theory, building the skills of reflective practice and the critical review of evidence, as well as a foundation in business and management functions. Finding the right balance and interconnections between theory and practice can be challenging for both students and ALs.

The interviewed ALs and those in the feedback event considered the EBI to be the key part of the learning process for their students and the one that their students found the most challenging. One tutor called it the 'vehicle of the learning journey' and used his feedback on intervening assignments to help 'signpost' to the final EBI-related assignment. He saw his students' understanding coalescing toward the end of the module, when they submitted their final 'travel report' on their year-long set of EBI activities.

Centred on the students' practice, the EBI can present a number of operational challenges. For example, ALs found it challenging to address students' workplace issues – redundancy, changing priorities at work and new work roles – and how to help students to negotiate these transitions. The ALs shared suggestions in the forum leading to new ways to facilitate student learning such as pairing students and providing suggestions for alternative contexts in which to set the EBI. Yet ALs said that the greatest challenge they faced in understanding the EBI process was understanding the 'final destination' and that they only grasped this once they had worked through the first year of activities with their students. Even those who had facilitated EBI learning in the MBA capstone thought going through the process with their students was crucial to their understanding of the module's practice-based learning approach. An AL explained, 'My intention is now more directly to help students appreciate the range of ways in which concepts can be applied and how their relevance can be explored and evaluated when applied to different sets of circumstances.

This involves asking more challenging questions and less provision of answers and suggestions'. In many ways, the ALs, themselves, undertook a year-long practice-based learning experience.

Where the challenge emerges is to ensure that students are developing an adequate understanding of management theory, the demonstration of which is crucial to successful assignments and success on the final examination. In reflection, the ALs found that their own teaching practice needed to be less didactic and more facilitative in order to encourage reflective practice in their students. Developing students into 'reflective practitioners' has been an important part of the OU's MBA since its creation, and the EBI dedicates a substantial part of the study time to students' reflective engagement with the material and their practice. Through this strong focus on the EBI, ALs were able to successfully encourage their students to go beyond mere memorisation of the theories and to reflect on how the ideas might influence their practice. One AL explained that because the module was new and used a different approach, he and his fellow ALs were more likely to think about their tutoring approach and style because what they had done previously was unlikely to fit the new module's pedagogy. However, more notable was that the AL forum provided a mechanism for ALs to reflect on their *own* practice by virtue of the sharing community that developed. An AL noted: '[N]ot only were questions answered that I had myself, fresh ideas brought in, but also questions and ideas brought up that I/we as ALs should think about'. While the module's writers posed and/or answered some of these questions, more generally they encouraged ALs to discuss these amongst themselves, and through this interaction, the ALs were given the space to reflect on their own practice by virtue of sharing their ideas with one another.

Information Discernment

Another key piece of learning for the ALs focused on how they developed and enhanced their students' information discernment. The module builds students' skills in digital literacy through a resource-rich, online learning context, which helps them to develop skills in how to access information and discern its validity and usefulness. Thus, ALs need to develop a mastery of the Virtual Learning Environment (VLE) and its forums, as well as other online resources much more so than in past iterations of the MBA. Translating their facilitation role into an online setting requires ALs to be risk-takers and to have an explorer mentality (Cox et al. 2000), and they need to recognise the subtle balance needed between content instruction and the learning process (Cameron 2009).

The module's writers expected the AL forum to play an important part in their coming to grips with the online tools and resources used in the module. In some ways, it did facilitate this process, and ALs shared different tools with one another (such as video conferencing approaches). However, AL learning about the tools became integrated into learning about the pedagogy as a whole. For example, one

debate in the AL forum emerged from some tutors forwarding concerns from students that they needed to find resources themselves instead of having them provided to them. Some tutors thought it best to provide the materials, while others believed it is best for the students to learn these digital literacy skills early on.

The students' journey is structured so that as the module progresses, students are offered fewer specific instructions for finding information on a particular topic (e.g. how to use the online library system), and a broader remit emerges for identifying sources and information on their own, including bringing into their forum conversation information from their own work contexts. Thus, ALs had to manage student learning away from a more traditional theory-driven approach to one that incorporated learning in many different contexts. One AL noted how she encouraged her students to critically engage in a deeper understanding of the material:

> I have tried to emphasise that more holistic approach in the way I approach the material and respond to and support my student group in terms of their questions about content and the skills being developed. I have taken from this a view that my role should be much more actively challenging of students to understand the relevance of ideas presented in [the module] in relation to the practical issues in their own organisations and their long-term development as managers. This shifts the focus on to a deeper understanding of 'why' rather than a more superficial learning of isolated content or a series of theoretical ideas (i.e. the 'what').

This experience echoes some of the findings from the critical engagement workshops, in which one participating AL had noted 'a change from being accustomed to defending course materials from attacks by sceptical students to encouraging scepticism and debate and the testing of theory in working practice to gather evidence of real usefulness or inapplicability' (Cameron 2009, p. 15). A module AL explained, 'I am aware that [a more challenging stance] should ideally be progressive over the course of the whole module – moving from a higher level of direction and guidance from me at the outset to an increasingly facilitative and collaborative approach as it continues'.

Interestingly, while AL feedback did emphasise their forum as an important and useful tool for sharing best practices and advice, they did not identify it as important for building a better understanding of the VLE. They saw their role as facilitating and understanding of the module's underlying philosophy rather than as a guide to how to navigate its pages, which echoes the more general finding that the AL forum provided less 'how to' instruction and more dialogue about the reasons for using a particular approach.

Collaborative and Independent Learning

A large number of ALs for the MBA stage 1 module are familiar with Lave and Wenger's 'communities of practice' model (1991) and are therefore already aware of the ways that the forums can be used for discussion and collaborative learning. One AL described how the student forum they facilitated was moving toward this model: '[I]t can go beyond being a Q&A forum (where students find the info and

guidance they need) to really being a two-way street of learning from each other (closer to a true CoP)'.

Such collaborative learning is explicitly built into the pedagogy of the module – and at least two assignments require students to incorporate others' perspectives in how they discuss their own views on a topic. Students are encouraged to see that they already have expertise on which they can draw to develop a deeper understanding of theories and ideas they are learning. This is a different approach to that which many of the experienced ALs have come across on former MBA modules.

The module provides both formal and informal opportunities for students to learn from one another, which are integrated into the learning journey and which allow students to develop their social networks and benefit from collaborative learning at a distance. Simultaneously, the learning materials and learning journey encourage students to develop independent learning skills. ALs must therefore develop their own skills in facilitating collaborative learning through asynchronous forums and synchronous video conferencing at the same time as renewing their facilitation skills. This balance can be difficult to attain, particularly on a programme's opening module when students often want more guidance.

ALs mentioned the importance of dialogue and discussion to enhance student learning and how crucial it was to develop this group cohesion early on. One AL recalled how one of her students asked for guidance on how she could gather information on her organisation's customers when she had no direct contact with them. The AL explained that her first reaction would have been to give the answer, but she had decided to hold off in order to allow a discussion of this issue to develop on the student forum. The AL reflected that, in the end, through the ensuing discussion, both she and her student had 'thought more deeply' and learned more about the topic than would have occurred by giving a simple answer.

ALs have gained a better understanding of their facilitative role – as one AL put it: 'It is okay for there to be periods for the [student forum] to be (more) quiet, to allow for it to happen, to let forum participants take the lead. To let the forum manage itself with minimal intervention is not a sign of laziness but actually can be what is desired'. Another AL described a similar approach emerging for his facilitation of the forum: 'My intention is now more directly to help students appreciate the range of ways in which concepts can be applied and how their relevance can be explored and evaluated when applied to different sets of circumstances. This involves asking more challenging questions and less provision of answers and suggestions'. This echoes prior research of an undergraduate practice-based learning module, where ALs distinguished this pedagogical practice as 'hands off vs. hands on' (Reid et al. 2010) relating to forum facilitation often requiring a 'hands off' or 'light touch' approach to stimulate learning.

In many ways, the module's writers intended the AL forum to serve as an example of this balanced approach to forum facilitation. In the hope of developing a community of practice – and one in which ALs could challenge prevailing practice – the forum was facilitated with a higher presence of the module's writers than in earlier AL module forums but with greater encouragement of dialogue, discussion and debate. This process was challenging at times, particularly in identifying how best

to respond to AL queries. Yet the ALs mentioned how invaluable the forum was in developing their teaching approach and how learning from their colleagues improved their practice.

Contribution, Limitations and Next Steps

This chapter reports on a subset of a larger case study focused on the creation of an innovative learning design for a new MBA module, which underscores the challenges associated with implementing innovative pedagogies, particularly within an online setting. The data suggest that a developing community of practice aided in the implementation of the module and that through encouraging dialogue and the development of an AL community of practice, ALs experienced their own practice-based learning.

This chapter provides an important contribution in thinking about how dialogue plays a crucial and multidirectional role in how pedagogical innovation takes place. Distance learning universities, such as the OU, which offer programmes at scale, face the challenge of consistency when implementing innovative pedagogies, and dialogues within emergent communities of practice allow members to discuss, debate and challenge perceptions and develop more robust teaching practices. This highlights the importance of a 'community of practice' or 'collaborative learning' setting for revealing where inconsistencies arise, particularly when modules are presented to scale and at a distance. With an understanding that the first presentation of the module would reveal these challenges, the AL forum became a place for developing a mutual understanding of what certain activities and assignments meant – not just as envisioned by the module's academic writers, but also by those who were actively facilitating it.

There were striking similarities between the experiences of students and those of their ALs who facilitate their learning. Interactions amongst ALs mirrored the experiences they noted with their own students – using dialogue to develop their understanding of the module, its pedagogy and learning journey. Through encouragement of both 'normal' and 'abnormal' discourse in the AL forum, ALs were given space to identify and discuss better practices for facilitating their students' learning.

However, despite the active community that evolved in the AL forum, there was still a number of ALs who did not participate in forum discussions or feedback on their first year's experiences. Some ALs mentioned privately that they did not do so because they felt there was too much debate from the 'loud voices', while others just preferred to get on with their teaching without engaging in the pedagogical debates. This 'silence' forms an important limitation of the data for the case study and points to the need for further enquiry into the role of 'silence' in online forums and uncovering whether the 'voices' of those who read posts but do not participate are related to what Lave and Wenger (1991) might call 'legitimate peripheral participation' or are, instead, related to Roberts' (2006) disempowerment and disenfranchisement from the community of practice.

Secondly, the AL forum can be a lively place for debate, and different points of view were encouraged by the module team to stimulate learning and to empower ALs in the module development process. For some ALs, this 'having a say' in shaping the module is an important part of implementing innovative approaches. However, the process can also be unwieldy, and some ALs may have felt disempowered rather than empowered to share their perspectives. Further research is needed into identifying the best ways to incorporate these discussions into module development and improvement mechanisms to take account of emergent 'abnormal discourse'. Further research and evaluation is needed to understand how to best involve ALs in the module development process and to provide more development opportunities that engage and empower them in support of pedagogical innovation.

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Chapter 9
Survival Lessons: Academic Continuity, Business Continuity, and Technology

Claudine SchWeber

Introduction

Whether the challenge comes from snowstorms, hurricanes, H1N1 virus, strikes, oil spills, or war, the concern for survival is an integral part of the business profession. This attention to survival, called *continuity of operations* (COOP) or *business continuity*, refers to an organization's "ability to maintain or restore its business… when [normal operations have been] threatened or disrupted…" (Pirani and Yanosky 2007). The key feature of COOP is the need to ensure that "*essential functions* can continue during and after a disaster… [including] the prevention of *mission-critical services interruptions*, and the ability to [*restore] full functionality* as quickly as possible" (Elliot et al. 2010, p. 3; italics).

Higher education has been affected by similar challenges particularly in the past decade, but there appears to have been much less attention to continuity issues until recently although educational closures can last from days to months impacting students, instructors, staff, and the community (e.g., in the USA, Hurricane Katrina in 2005; Virginia Tech shootings 2007). Technological developments—such as text alerts, e-learning, and Skype—now offer opportunities for educators to apply lessons from business for academic continuity: "the process of maintaining continuity of learning in a crisis situation…; the extent to which operations can be sustained which enable affected students to continue their academic studies during the response, aftermath, and recovery phases despite the disruption caused by the crisis" (Academic Continuity n.d.a, b). Academic continuity represents a commitment on the part of educational officials to provide opportunities for students and instructors to remain engaged in their education despite external disruptions and for the organization to be resilient.

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P. Van den Bossche et al. (eds.), *Facilitating Learning in the 21st Century: Leading through Technology, Diversity and Authenticity*, Advances in Business Education and Training 5, DOI 10.1007/978-94-007-6137-7_9,

Shouldn't attention to continuity also be part of the higher education community? As the above suggests, the answer is YES! The "essential function" of education is teaching and learning; its "mission-critical services" are those which enable operation of that function (such as communication, registration, tuition collection, and expenditures for salaries and supplies); the ability to "restore…full functionality" involves a variety of operational and IT business components, as well as security and safety (particularly since the 2007, 2008 campus shootings in the USA).

This chapter argues that providing education today necessitates attention to maintaining continued access to teaching and learning—academic continuity—and that much like business continuity processes, technological developments are integral to this survival. The discussion which follows includes a brief summary of key business continuity-resilience principles, examples of the application of these principles by educational institutions faced with crisis, and suggestions for designing and implementing institutional resilience systems.

Business Continuity

Business continuity management (BCM) is the "process intended to support organizations in building resilience…to recover key activities quickly…in order to minimize organizational impacts and protect key stakeholders" (Elliot et al. 2010 p. 3–4). Naturally, the business concern focuses on retaining customers and maintaining services, particularly when confronted by a disaster such as hurricane or snowstorm. A mid-2000 US government report, for example, indicated that 40% of all companies that experienced a disaster did not reopen (Curtis 2008, p. 38). In an environment where even brief interruptions could halt regular activities, "responding effectively to such circumstances can be the difference between a modest interruption and a severe blow to the institution's viability, providing powerful financial incentives to optimize [business continuity] readiness" (Pirani and Yanosky 2007).

Discussions about COOP are connected to a four-stage cycle, adapted from emergency management: mitigation, preparation, response, and recovery (Crichton et al. 2009; Chandra et al. 2010).

http://lincolncountyema.net/pg_cycle.htm

A recent pilot study of Business Continuity Management (BCM) revealed that the academic and professional literature's emphasis is on the mitigation and preparation stages, regardless of the probability-consequence options such as low probability-low consequence, low probability-high consequence, high probability-high consequence, and high probability-low consequence (SchWeber and Bouchard 2011; Crichton et al. 2009). Attention to these early stages is a characteristic of what have been called HROs—"high reliability organizations" (Weick and Sutcliffe 2007, p. 1), which involves creating a culture of continuity (Comfort 1994, p. 157; Boin and Lagadec 2000; Brazeau 2008; Curtis 2008).

Several overlapping principles associated with resiliency have been identified as supporting the ability to manage in conditions of uncertainty:

- Ability to make "decisions in unfamiliar contexts": due to the unknown nature of future alternatives, "only by going forward it is possible to know what the options are for going further forward" (Winter 2005, p. 526). Rational decision models may limit the ability to assess the possibilities in a unique context, partly because some of the events are occurring for the first time and further options may be hidden and partly because focusing on the "right answer" without being prepared to take risks is a problem since "the less familiar the context, the more rapid and fundamental the change" (Winter 2005, p. 527).
- Developing organizational "agility: the ability to manage the speed and direction of change" particularly through the use of IT (Ekmekci and Bergstrand 2010, p. 20).
- Practicing *bricolage*: creatively developing solutions out of existing resources (Weick 1993). Weick argues that "high reliability organizations" can effectively implement bricolage if they have a close knowledge of the available resources, prepare for possible failure, and establish feedback mechanisms (Weick and Sutcliffe 2007).
- Leveraging existing resources to obtain additional support (Mallak 1998, pp. 5–7)

Academic Continuity

Since teaching and learning is a core function of higher education, a culture of continuity would mean that the institution "has internalized continuity management to the extent that all strategic decisions…are made with a view towards making critical enabling processes resilient from the beginning" (Brazeau 2008, p. 28). While discontinuity of learning, especially for extended periods, due to a disaster or crisis may not have been a serious concern in the past, the attack on 11 September 2001, the Hurricane Katrina disaster in New Orleans (2005), and the Virginia Tech shootings (2007) appear to have increased attention in the USA to academic continuity—teaching and learning—and the need for emergency management planning. The economic and psychological consequences of the shutdowns, the fears about personal security, as well as the threats to a university's reputation, may also have increased the concerns. For example, Tulane University in New Orleans shut down the entire fall 2005 semester, spent weeks searching for faculty and students who had evacuated

throughout the USA, and needed to repair and replace damaged building and related losses—at a cost of over $600 million (U.S. Department of Education and Office of Safe and Drug-Free School 2010, p. 15). A report on safety and security issues on college campuses stated that as a result of the Virginia Tech disaster "there is no doubt that a university's dealing with safety and security is a decision-making factor for prospective students and parents…" (Thaler-Carter 2009, p. 32).

The French creation of CNED in 1939, described below, is an early example of continuity planning and implementation. Thereafter, two twenty-first-century events reveal the ability of US higher education institutions to be agile and to apply technological tools when faced with disaster: fall 2005, when Hurricane Katrina hit the southeastern USA, particularly the New Orleans area and summer 2006, during the war between Lebanon and Israel. In both of these instances, advance preparation was in place which enabled classes to continue in varying degrees by actions on the part of the originating educational institution using varied technology: in New Orleans, Xavier University provided online coursework and ongoing communication and in Lebanon, Empire State College used varied distance learning activities and email communications with its students in the Lebanon Residency Program (SchWeber 2008, pp. 3–5). Finally, French and US preparation plans in 2008 for potential H1N1 virus disaster are noted, showing how technology had become an integral part of academic continuity planning.

Centre National d'Enseignement Distance [CNED], 1939

A pioneering example of academic continuity is the establishment of what was to become the *Centre national d'enseignement a distance* [CNED] (Bourrel 2003) by the French government in December 1939, more than 70 years ago, just 3 months after WWII was declared. CNED's pioneering development was to quickly develop an alternative to their face-to-face classes by providing correspondence courses as a temporary measure during the war, adapting the content, methods, and instructors that had been used in onsite programs (Bourrel 2003). The creation of CNED in December l939 reveals thinking and action in keeping with the above principles. After the war was declared in 3 September 1939, two education ministers, one of whom was the finance director, approached French President Albert Lebrun with the plan to create an alternative to the onsite education program because war conditions made it impossible to continue standard operations. The alternative they recommended was learning by correspondence. The evacuation of populations, including thousands of students, to the south of France since September 1939, the transfer of educational centers to military and related purposes so that they were no longer available or safe for learning, and the loss of a high proportion of teachers who had been drafted—all of these developments provided the context for the plan and the rationale for action. The 1939 ministers' plan built on almost a century of varied successful distance learning experiences in Europe, Canada, and United States with education by mail, radio, and international couriers which were known

to the French authorities (Bourrel 2003). The French government approved the plan in 2 December 1939 and authorized funds for central office staff, materials, student funding, and a correspondence education director. The director, a man with experience in France's radio education, was hired in February 1940 (Bourrel 2003). CNED's actions reveal an organization agile enough to quickly leverage existing resources, such as curriculum and teachers, plus the political connections to move forward without knowing all the options, like the *bricoleur* using the tools at hand. The educational program was to replicate the courses and methods that had been in place, using as many of the teachers as possible to create:

> …correspondence education which would follow the same curriculum, the same methods and [be] given by the same teachers as in the existing educational system. (Bourrel 2003, p. 10)

Xavier University and Hurricane Katrina, Summer 2005

Hurricane Katrina involved the ongoing development of an academic continuity operation at Xavier University in New Orleans in fall 2005. Using the online courses in the *Sloan Semester* database, students from Louisiana and Mississippi colleges were able to continue their education regardless of where they had gone for safety. The *Sloan Semester* project was a unique electronic partnership among higher education institutions, the Southern Regional Education Board (SREB), and the Sloan Foundation in which institutions throughout the country contributed free online courses to a central repository providing students in the affected areas with a choice of approximately 150 courses. The partnership essentially established a virtual institution in 21 days! The SREB Electronic Campus was the Web portal of online courses from 153 US colleges and universities. SREB infrastructure was the online backbone for the *Sloan Semester* students to select and participate in credit-bearing courses (Sloan Semester n.d.).

Using these courses and other mechanisms, Xavier was able to recover sufficiently to reopen in 17 January 2006 for the spring term, with approximately 75% of the original fall 2005 enrollment (3,091 students) (Xavier University of Louisiana n.d.; Xavier University of Louisiana 2006a). By fall 2007, freshman enrollments had increased again to 50% more than fall 2006, suggesting recovery was in place (SchWeber 2008, pp. 4–5; Xavier University of Louisiana 2006a).

Xavier's recovery was affected by three factors: first, about 40% of the returning spring semester students had enrolled in coursework at other campuses or online in fall 2005; of these, one-third (418) took one or more courses through the *Sloan Semester Program.* This number was substantially more than at any other Louisiana or Mississippi institution (Sloan Semester n.d.; Xavier University of Louisiana 2006b; SchWeber 2008). Second, Xavier was technologically prepared. Backup tapes were housed at a data storage facility rather than in a nearby building, as was the case with some local institutions. An emergency website in California had been established in May 2005, 3 months before the storm. Third, Xavier had established a communication partner with a sister institution in Ohio, which provided the early

technology linkages. As a result, Xavier implemented various communication paths quickly, enabling ongoing information about developments beginning in October 2005, including biweekly online reports about renovation details, photos of progress with the campus cleanup, interviews with students "eager to return," emails with students and their families, progress toward the intended January 2006 reopening, class schedules for those needing to repeat fall semester coursework, reports on fundraising and repair plans, details of registration procedures, and spring semester information. The preparation evidenced in the second two factors was due, in part, to the work of Catherine Lewis, the Vice President of Technology Administration, who had joined Xavier from IBM just 4 months earlier. Knowing that hurricanes were a high probability-high consequence event in the New Orleans area, she applied some of the prevention strategies she had learned in her business experience (C. T. Lewis, personal communications, September–December 2006).

Empire State College and the War in Lebanon, 2006

In summer 2006, war was the impetus for a crisis response that exemplifies academic continuity management. During the war in Lebanon, Empire State College (ESC) in New York had to move quickly to develop and implement an alternative to their annual onsite residencies with the American University of Technology and the American University of Science and Technology. These programs were headquartered in Lebanon as part of junior and senior year Bachelor of Science degree, and students from other Middle East institutions also participated. The courses were online and a 10-day onsite residency with US faculty. Since there were typically 200–300 students and 20 faculty per semester, this was an important part of ESC's offerings.

When war broke out in the summer 2006, ESC realized that the faculty could not travel to Lebanon for the fall residency and that all students could not gather together at the two facilities. To enable the courses and learning to continue, ESC created a "virtual residency" using multimedia and videotaping faculty, burning DVDs of the faculty lectures and shipping the DVDs to the two Lebanese universities, and frequently communicating with students and Lebanese university administrators. Local students viewed the videos at the two partner institutions; those outside of Lebanon received individual copies. In-depth interaction was supported/supplemented by email, chat, and telephone. Thus, the Lebanon program was able to continue in fall 2006 and beyond. ESC's recovery from the war environment and the quick change from the onsite-residency model to the technology-based model is likely due to several factors: they moved quickly to work with their educational partners to establish a home base for the alternate learning mode (DVD); their experience with technology, in the form of online courses for other programs, meant that students and faculty were comfortable with technology-based learning; this comfort level also enabled the transformation of the face-to-face learning to DVD lectures by the instructors; they developed and implemented an effective communication system using established channels and opening some new ones (SchWeber 2008, pp. 3–4).

Empire State College's (ESC) actions are another example of academic continuity management and the application of resiliency principles: Once war was imminent, ESC was agile enough to make decisions quickly, allowing for problem solving and monitoring by the regional director, which also enabled them to continue to move forward; solutions were built upon existing knowledge and experience with varied distance learning tools; faculty transformed their standard teaching mode, leveraging these existing resource; in this uncertain environment, communication with students and partner institutions was continual and allowed for adjustments.

2008 Preparation for H1N1 and the Role of Technology: France and USA

In the twenty-first-century, technology is a key feature of academic continuity planning and response, as well as recovery. In 2008, the potential for massive absenteeism, illness, or deaths due to the impending H1N1 virus resulted in attention to continuity planning for higher education and as well as business (REVICA n.d.a, b). In February 2008, the French government produced a draft plan that included use of technology for continued learning—*continuite pedagogique*—through universities which are part of the digital environment *universités numeriques* and required that all students supply their email addresses upon application to study and assumed that instructors were digitally literate. The French plan included using radio, television, as well as the Internet (Ministère 2008, pp. 10–12).

In the USA, many higher education institutions developed continuity plans in anticipation of the pandemic flu of 2008–2009. A recent study of the H1N1 plans focused exclusively on the role of IT in 20 US universities in their business continuity plans from an organizational agility perspective. The study revealed that the role of IT extended beyond infrastructure support to include services such as conversion of face-to-face classes to Web-based courses, creating backups using media such as audio recordings, establishing communication protocols, developing student readiness instructions, creating faculty training workshops, and providing additional support services (Ekmekci and Bergstrand 2010). Both 2008 French and US plans had much in common: broad communication to stakeholders before and during any disruption, identification and testing of varied alternative media, preparation by faculty and students, assessment of IT capabilities, and staff assignments.

Technology

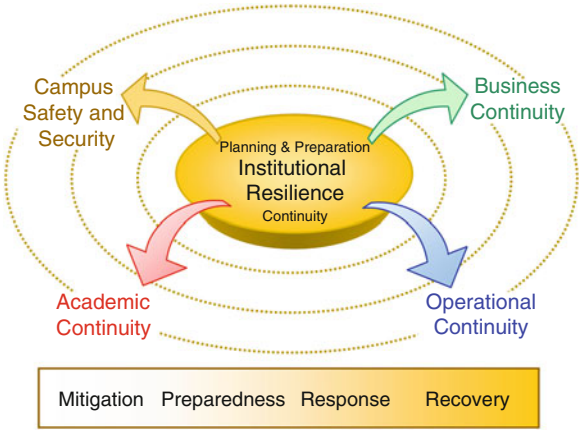
Technological continuity is integral to organizational survival today, whether in business or higher education. Indeed, BCM originated in the need to protect and preserve information systems and now also includes a strategic focus (Elliot et al. 2010, pp. 1–4). The examples of academic continuity reflect how technology has

become an integral part of emergency management. Today, US campus plans include technology as communication tool, such as the ten options available at Virginia Tech (e.g., use of the website, emergency alerts to phones, broadcast emails, as well as varied telephone and television); technology as the vehicle for academic continuity via online coursework; technology systems to enable operational and business continuity such as processing paychecks, data backup systems, identification of staff locations, and distance working sites; and establishment of an incident command center that can easily be located away from the disaster (Hyatt 2010; Young 2009; Cavanaugh 2005). The US Department of Education's *Action Guide for Emergency Management…Higher Education* (2010) includes the suggestions for the application of technology at each stage from mitigation to recovery (U.S. Department of Education and Office of Safe and Drug-Free School 2010).

Designing for Survival and Continuity

In the business community, a key outcome of continuity management is called the "Design for Resilience." This means that "an organization has internalized continuity management to the extent that strategic decisions…are made with a view towards making critical enabling processes resilient from the beginning" (Brazeau 2008, p. 28). For higher education, the equivalent is designing to survive the disruptions and continuing with the mission. Such plans could be adapted to short-term events (such as snowstorms, transit strikes, campus shooting) or long-term ones (such as tornados, hurricanes).

The graphic below shows that academic continuity—teaching and learning—requires collaboration and interoperability with the safety and security, business, and operation functions. Any design must consider and include all four institutional resilience functions at each stage of an emergency as part of the crisis management planning.



www.academiccontinuity.org

Several US examples of designs for continuity at each stage of emergency management are presented below. Note that these designs reflect collaboration among various university offices—administration, faculty, facilities, student life, security, business, and technology—which conduct the academic, security, business, and operational functions.

Mitigation and preparation: Much of the crisis management literature argues that mitigation and preparation are the most critical stages for effectively responding to crises and recovery (SchWeber and Bouchard 2011). Mitigation refers to actions that should reduce or eliminate damage or disaster, such as strong lighting on a campus, security services escorts at night, and structural modifications to buildings in areas that are prone to natural disasters, for example, hurricanes. Preparation refers to strategies, processes, and designated leadership which would be activated in the case of a crisis such as partnerships with law enforcement, medical services, evacuation, and notification plans (U.S. Department of Education and Office of Safe and Drug-Free School 2010). For example, George Mason University (GMU) in Virginia established partnerships with local first-responder agencies and obtained funding to purchase radios on the same frequency as the police and firefighters. In addition, GMU established and periodically tested on-campus communication systems, such as telephone, GMU-TV, and Web to assure they all reach their target audience, as well testing campus evacuation systems. GMU had learned after 9/11 that they didn't even have correct cell phone numbers for staff and they could not reach the on-campus populations or the police, firefighters (Hughes and Bushey 2006). Other mitigation and preparation strategies involve using new technology to provide continuity of learning. For example, some universities developed training to teach online for classroom faculty as a backup if the campus was locked down. Fairleigh Dickinson University in New Jersey developed a "quick start" guide for faculty; Northern Virginia Community College developed "minimum competencies" as part of the faculty training with the learning management system to enable courses to continue virtually whether for short-term (e.g., after a snowstorm) or long-term (e.g., after hurricanes) academic continuity (Young 2009). Another approach involves communication notifying students, family, and campus personnel about the institution's plans, shortly after a crisis or disaster occurs at another campus. Texas Tech University (TTU) did that right after the Virginia Tech tragedy. The correspondence included the TTU emergency plan website, on-campus notification processes, and varied communication options (U.S. Department of Education and Office of Safe and Drug-Free School 2010, p. 13).

Response: Responding to an emergency requires taking action to contain and resolve the emergency. In essence, this is the "continuity of operations" (COOP) phase, which ensures that "essential functions…continue" (Elliot et al. 2010, p. 3) and builds on the mitigation and preparation work. At this stage, the emergency plan must be implemented. This includes communication with stakeholders (campus community, emergency personnel, families, etc.). Leadership is critical in this stage, requiring that responsibilities must have been assigned earlier and that those in charge are capable of making quick decisions in "unfamiliar contexts" (Winter 2005, p. 526). As one author noted, "success depends upon decisive, experienced leaders who can execute a comprehensive plan…with a personal touch" (Cavanaugh

2005, p. 8). The most dramatic example is the "Sloan Semester" project, noted earlier, developed within days of Hurricane Katrina hitting New Orleans and implemented in 3 weeks. The result was a fully functional "virtual" institution, which offered over 1,350 courses from 153 institutions in 38 states to about 1,750 students, utilizing over 4,000 "seats" in online courses at the undergraduate and graduate levels—at no charge to the students (Sloan Semester).

Recovery: The goal at this stage is restoring the organization to "full functionality… quickly" (Elliot et al. 2010, p. 3). This involves the physical plant, business functions, academic learning, operations, and security program. It often also involves dealing with psychological/emotional health of campus members (U.S. Department of Education and Office of Safe and Drug-Free School 2010). In the latter case, programs to help people deal with the trauma of the event are needed, requiring budget allocation in the mitigation and preparation stages. Some programs have been having mental health professionals available for everyone, convocations which enable campus members to share their experiences, and counseling to deal with post-traumatic stress disorder (Hyatt 2010; Cavanaugh 2005). Tulane University's situation is an example of having to deal with the four functions shown above. Tulane communicated with all stakeholders, including (especially?) the parents; credit for courses taken at other universities had to be accepted; to assure that employees could be paid, new databases had to be developed; food, clothing, and housing had to be established for those remaining in the area. The recovery also involved a major reorganization, including layoffs of faculty and staff, elimination of academic and sports programs, and financial revisions (U.S. Department of Education and Office of Safe and Drug-Free School 2010, p. 15).

The above examples indicate that continuity at each stage means communication with all stakeholders using varied means (e.g., website, telephone tree, broadcast voicemail, public media), continuation of learning using media (Web, television, DVDs, radio, etc.), developing instructor readiness, identifying infrastructure support needs, establishing collaboration with external security partners and first responders, and assuring that multiple technology systems are available (Academic Continuity n.d.a, b.; Ekmekci and Bergstrand 2010; Hyatt 2010).

Further Questions and Research

Accomplishing a cultural mindset for continuity at the varied global higher education institutions leaves questions—both practical and analytical—which offer opportunities for further research, such as those dealing with:

- Technology infrastructure: what technological skills and support are needed; where should backup systems be deployed; what are the associated costs and staffing?
- Leadership: how might case analyses of effective and ineffective response and recovery provide evidence of leadership decision-making and its role in enabling

or preventing agility and survival in the face of disruptions? Given the role of the media in reporting about disasters, what "reputation management" strategies need to be part of a continuity plan?

- The role of risk-benefit thinking and cost: What is the relationship between the perceived probability of the event, the potential consequences, and the anticipated costs with respect to planning and action? For example, would institutions be more or less likely to develop and finance a plan if the probability is low, consequences are low, but the cost is high versus the cost is low; if the probability is high, the consequence is low, and the cost is low; if the probability is high, the consequence is high, and the cost is high? One example of such thinking was the 1994 Ford Pinto case in the USA, in which Ford Motor Company executives decided *not* to replace a defective fuel system design; the replacement would have cost US$11 per car and which their estimates suggested would result in 180 fewer deaths, 180 fewer burn injuries, and 2,100 burned cars. Instead, Ford calculated that payment for deaths and injuries would be $87.5 million less than the cost of design changes and therefore retained the defective fuel system (Ford Pinto Case 2011)
- Cause and effect: what is the relationship between planning and recovery—how strong is the causal relationship between "continuity planning and effective response"? (Somers 2009, p. 12) If not strong, what are the factors which affect the relationship? What might cases of recovery without such planning indicate about the value of continuity planning?

Such work would add substantially to our knowledge about the issues and implications of providing educational continuity—or the consequences of not doing so—in the twenty-first century in light of the continuing reality of disasters and crises.

Conclusion

The higher education examples above and the business continuity-resilience literature strongly suggest that a "culture of continuity" and emergency management need to be an integral part of the higher education environment. Discontinuity can lead to substantial financial loss, reputation damage, job losses, curriculum limitations, and more. Technology now offers opportunities that were not available in the past: alternative teaching modes, communication systems, and data system backups that should allow for quick decisions in "unfamiliar contexts." Leadership is needed to take action and harness these tools—before, during, and after a crisis.

Acknowledgments Many thanks to Martine Vidal, *Distances et saviors* editor, for commenting on the draft and making sure the information on CNED was accurate and correctly cited and to Marcia Bouchard who corrected my poor APA and double-checked the existence of the weblinks. Such friends and colleagues are another reason to study and write.

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