Noah P. Barsky
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Kelly Smith
Editors

Advances in Business Education and Training 1

The Power of Technology for Learning

Springer

The Power of Technology for Learning

Advances in Business Education and Training

Volume 1

Scope of the series

Advances in Business Education & Training is a Book Series to foster advancement 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.
The book series will include both edited volumes comprised of peer-reviewed articles as authored books. Each volume is dedicated to a specific theme in business education, and will be complemented with articles that can be a resource to advance business education and training.

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The Power of Technology for Learning

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Preface

In a world, where knowledge is our main asset and learning becomes the most important process, Business Education is constantly looking for the right practices to develop the future leaders. Business enterprises demand graduates that become true experts. But can business schools indeed create learning experiences that address the needs of the global marketplace? Do they prepare students for changing business practices? Can they demonstrate the value of their teaching? Can business schools teach students to build learning organizations within the global market place as business is calling for?

The ambition of the book series Advances in Business Education and Training is to contribute to this search and foster advancement in the field of Business Education and Training. It wants to serve as an international forum for scholarly and state-of-the-art research and development into all aspects of Business Education and Training. Hereto, 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. We 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.

In this way, this book series wants to be one of the platforms of the Ed*i*neb-network (www.ed*i*neb.net) which brings together professionals in educational institutions and corporate learning centers, who strive for innovation in developing learning environments.

The present book, the first in this series, is edited by Noah P. Barsky, Mike Clements, Jakob Ravn, and Kelly Smith. They have brought together a range of interesting and thought-provoking ideas. We are happy that this book provides a stage to share them with a broad audience. We are confident that the ideas presented will enrich your thinking and engage you in the ongoing search for powerful learning environments.

The chapters in this book are grouped in two sections. (1) An issue section on technology and learning. This part covers key applications of new technologies

in business education and training. It is looked if these technologies provide tools for the development of powerful learning environments. (2) An open part containing a diversity of topics related to advances in Business Education & Training.

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Part I
Introduction: The Power of Technology for Learning

Kelly Smith and Mike Clements

It is hard to imagine a room in a college or university that does not have at least one computer in it, and a college or university without a computer laboratory is unthinkable. Technology surrounds us and pervades all aspects of university life. However, although most educators have adopted e-mail and web technologies into their teaching, it would appear that they have been slow to adopt other technology supported learning activities within business and economics subject areas (Goffe and Sosin, 2005; Kuratko, 2005; Salmon, 2000).

Interactive on-line activities have the potential to enhance business and economics education and can add to our repertoire of available and appropriate teaching tools. Benefits to learning and teaching can demonstrated through the use of the communication, co-operation and collaborative aspects of online working (Salmon, 2000) with communication tools such as those within Virtual Learning Environments (VLEs) improving learning relationships between the tutor and student and between student peers as they become members of a knowledge community or community of practice. Students report benefits of using learning technologies such as the ability to learn at their own pace, to learn independently, and to have fun (Hegarty, 2006). Elsewhere, computer simulations have been shown to offer students risk-free and multiple experiences of new venture decision making, helping to develop skills in complex decision making and providing instant feedback (Solomon, Weaver, and Fernald, 1994; Brawer, 1997).

Enterprise and entrepreneurship education is an interesting area for illustration and one we might expect to embrace learning technologies due to its stress on innovation (Kuratko, 2005). Uptake, as with many subject areas within business and economics, has been slower than might be expected. A survey of entrepreneurship education in the United States by Solomon, Duffy, and Tarabishy (2002) found that "only" 49% of 240 college and university respondents offered information about entrepreneurship on the web, with 12% offering internet-based distance learning. Fifty-three per cent of respondents reported that they required web-based assignments from their students. The

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authors found these results surprising "given the tremendous growth in personal, business, and academic technology" (p81). They called for increased use of internet-based assignments, knowledge portals, online chat rooms, and distance learning.

A recent survey of Higher Education Institutions (HIEs) in the United Kingdom conducted by McKeown and colleagues (2006) found similar results in that only 32% of pre-1992 (old) and 52% of post-1992 (new) of the responding universities used technology to support enterprise education programmes of study. Most of these programmes where based within Business Schools. The most common type of learning technology used was a VLE which can potentially present content and provide opportunities for self-directed learning, formative assessment, and discussion tasks; it is not clear which from the McKeown study whether VLEs were used simply as content providers, or to support more interactive forms of learning. The authors, however, were disappointed to note that PowerPoint and spreadsheets were being cited as learning technologies for action learning. They suggest this may be "an indicator of the lack of awareness of wider learning technologies or of more active and experimental forms of learning" (p. 609) that might be facilitated by such technologies.

At an institutional level, learning technologies may be considered a cost-effective teaching method (e.g. Botham & Mason, 2007), as large numbers of students can be taught en mass without the need for intensive tutor input although the degree of tutor-student interaction will depend on the type and level of learning required. However, learning how to use the available range of technologies effectively, and developing tasks and activities for use within them can often be a costly process. Two of the greatest costs, and therefore barriers to uptake of learning technologies, are for staff time and for training to acquire the necessary new skills (Arbaugh and Duray, 2002; Davies & Smith, 2006). Other barriers to the uptake of learning technologies include questions about the quality of learning and teaching that can take place compared with more traditional routes.

The five chapters in this section build on papers presented to recent ED*i*NEB conferences. Two chapters focus on case studies and practical examples, two present formal research findings, and one discusses the implications of changes in working practices and policy across Europe on education practice. All of the chapters demonstrate the benefits that learning technologies can bring and make recommendations to overcome potential problem issues as outlined below.

The first two chapters in this section add to our repertoire of learning and teaching support, providing of practical examples of the use of learning technologies. In Chapter 1, Rimbau-Gilabert and Ficapal-Cusí describe how online learning has been used to support a postgraduate Business course at the Open University of Catalonia. The authors are particularly interested in how learning technology can be used to support an increasing cohort of non-traditional students entering higher education through a "recognition of prior experiential

learning" route. Rimbau-Gilabert and Ficapal-Cusí argue that such students are more easily supported through the flexibility offered by online learning which releases time for other responsibilities related to work and family. Although the technology required to support such students does not need to be particularly sophisticated, the authors explore how educational considerations, such as the role of the on-line tutor and tutor-student and student-student interactions, need to be taken into account.

In Chapter 2, Thijssen, Vernooij, and Stein describe their use of two economics games, one with a group of 20–25 year old students learning about entrepreneurship at the Vrije University in the Netherlands, and a second with an older group of professional innovation consultants working for the Dutch Government. Each game required differing levels of engagement with technology. The authors describe the games used, with particular emphasis on pedagogic and media characteristics, and suggest that games can provide both cognitive and regulative learning in a motivating and engaging way.

The second set of chapters, Chapter 3 and Chapter 4, present research to inform our knowledge and future use of learning technologies within business and economics subject areas. First, in Chapter 3, Rienties, Tempelaar, Dijkstra, Rehm, and Gijselaers compare the short- and long-term effects of two online remedial economics or mathematics courses for first-year foreign students studying bachelor-level International Business at Maastricht University. The two courses the authors compared were informed either by problem-based learning (economics) or by cognitive learning theory (mathematics). The results suggested that both problem-based learning and cognitive learning can be successfully supported through learning technologies with learners showing both short-term and long-term benefits to study performance. The authors conclude that as long as sufficient expertise and resources are invested, learning technologies and remedial courses can help overcome the problems accompanying the increasing internationalization of students.

Castelijn and Janssen explore the effectiveness of blended learning in a distance education setting in Chapter 4. The authors compare the exams scores of two groups of Masters-level students on two different distance learning and blended learning financial accounting courses. The exam scores are also separated into knowledge, application, and insight components. The results suggest that overall exam performance is not improved by the addition of additional small-scale group meetings enjoyed by the blended learning cohort. There are, however, differences when the exam questions are broken down into the knowledge, application and insight components. Castelijn and Janssen discuss possible reasons for these differences and the implications for the addition of face-to-face interactions to a distance learning paradigm.

Chapter 5, the final chapter of this section written by Lenz and Machado, provides a discussion on the rise of virtual teamwork and globalization on university education, emerging from the principles and framework of the Bologna Process. The authors explore how technology, particularly through collaborative computer supported learning, can support students and inculcate

the social skills and media and methodological competencies required to work in virtual and geographically separated teams.

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Chapter 1
Recognition of Prior Experiential Learning in Online Postgraduate Education

The Experience of the Master in Human Resource Management at the UOC

Eva Rimbau-Gilabert and Pilar Ficapal-Cusí

1.1 Introduction

The development of the knowledge society and economy has generated new training and learning requirements. Particularly, there is a need for an improved technical and scientific education, in addition to a need for transversal competences and the possibility of permanent learning. This interest in permanent or lifelong learning is clearly stated by the European Commission in the Tuning Project:

> The "knowledge society" is also a "learning society". This idea is intimately linked with how education is understood within a broader context: the continuum of lifelong learning, where the individual needs to be able to handle knowledge, to update it, to select what is appropriate for a particular context, to learn permanently, to understand what is learned in such a way that it can be adapted to new and rapidly changing situations.
>
> The need to recognize and value learning could also be seen as having an impact on qualifications and on the building of educational programs leading to degree qualifications. In this context, the consideration of competences that are side by side with the consideration of knowledge offers a number of advantages which are in harmony with the demands emerging from the new paradigm.
>
> European Commission (2002, 17).

The relevance of all personal contexts in the acquisition of knowledge and the need for its recognition culminates in diverse practices which are broadly referred to as recognition or assessment of prior learning (RPL or APL). These procedures involve the formal assessment of skills and knowledge acquired by an individual through previous experience, not necessarily related to an academic context. As a result of the said assessment, the educational institution that undertakes the appraisal may grant access to a programme of study, exemption or advanced standing within a course of study, or certification or partial credit towards an academic award (Day, 2002). When credit is

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awarded after such an assessment, RPL is also called "accreditation" of prior learning.[1] The central feature of RPL is, therefore, that "the [experiential] learning is credited as being of equal value to that gained in more traditional teaching and learning situations" (Field, 1993, 37).

RPL can encompass the recognition of different kinds of learning. In this sense, it is possible to distinguish two main categories within RPL (Evans, 1994; Brown, Bull & Pendlebury, 1997):

- The recognition of prior certificated learning (RPCL), which refers to learning for which the corresponding certification has been awarded by an educational institution or another education/training provider.
- The recognition of prior experiential learning (RPEL), which refers to uncertified learning acquired through experience. This kind of learning is attracting attention in today's "knowledge society", but still lacks systematisation throughout the Spanish higher education (HE) system.

RPCL has traditionally been more successful than RPEL in HE, "with universities appearing less cautious in their approach to certificated learning than experiential learning" (Scottish Qualifications Authority, 1997, 28). For example, in Spanish universities, there are well-established programmes of this kind, which recognise learning acquired in other HE institutions, while experience in RPEL is only anecdotal.

In Spain, RPEL is part of the agenda for the development of new postgraduate studies. It is suggested that universities include criteria for the recognition and accreditation of prior learning in their applications for new official postgraduate courses (Quality Assurance Agencies for the University System, 2005). This reflects the goals approved in the Bergen Communiqué of the Conference of European Ministers Responsible for Higher Education in May 2005:

> We see the development of national and European frameworks for qualifications as an opportunity to further embed lifelong learning in higher education. We will work with higher education institutions and others to improve recognition of prior learning including, where possible, non-formal and informal learning for access to, and as elements in, higher education programs.
>
> Conference of European Ministers Responsible for Higher Education (2005)

Originally beginning in the USA in the 1970s as a research project entitled "The Co-operative Assessment of Experiential Learning" (Day, 2002, 2), RPEL is now being applied in a number of OECD countries (OECD, 2005). However, its implementation has followed an uneven pace at different educational levels. As Tight (2002, 107) points out, "while APL and APEL have made their way into

[1] Denominations for this practice vary: Recognition of Prior Learning is used in Australia, New Zealand and South Africa; Prior Learning Assessment or PLA in the USA; Accreditation of Prior (Experiential) Learning or AP(E)L in the UK; Prior Learning Assessment and Recognition (PLAR) in Canada; Validation des Acquis Professionals (VAP) in France, etc. The original term is respected in the quotations included in this article.

further education, where they are seen as one more means of developing flexibility, they have yet to be so widely accepted in higher education".

This little usage of RPEL in HE institutions contrasts with its benefits for diverse stakeholders, as claimed by universities where such programmes have been implemented (see Fig 1.1).

RPEL is especially useful for adult learners, who want to access or return to further or HE and bring a wealth of knowledge that they have acquired throughout their lives (Lueddeke, 1997). These non-traditional students are often more easily addressed through the flexibility of online learning, as it releases time for other responsibilities related to work and family (Hill & Rivera, 2001). Consequently, online universities seem to be the natural environment for the expansion of RPEL programmes. However, scholarly articles about online RPEL are almost non-existent (two relevant exceptions are Blair & Hoy 2006; Sandberg, Anjewierden, Groothuismink, de Hoog & Giebels., 2000), and only some conference proceedings provide additional information about this subject (see

Students	Universities	Employers/Managers
• Credit achieved through RPEL can be used to access programmes leading to particular qualifications • Credit achieved can be counted as part of the total credit required for particular awards and may reduce the time it takes to obtain a qualification • Recognition of learning through experience and the process of reflection required to construct an RPEL claim often lead to an increased level of confidence • Preparing an RPEL claim helps develop independent study skills • Reflection on experiential learning enhances the theory/practice link, leading to an increased understanding of the two-way flow from academic learning to practice and vice versa	• A student's RPEL claim may suggest ideas for assessment techniques or for newly taught units • RPEL highlights the importance of issues in the work or leisure context • The RPEL process encourages study to be relevant to work, life and personal development • RPEL claims are often made on the basis of recent experience and, therefore, represent up-to-date, dynamic interaction with the world of work • RPEL can be used as a marketing tool to increase the appeal of the part-time provision of institutions	• RPEL candidates show a higher level of motivation and interest in the aspects of practice • RPEL may lead to an accelerated path to a qualification and, thus, less time spent away from the workplace • RPEL may prove less costly than fees for taught units • The process of reflection on practice may lead to new ideas/developments within the workplace

Source: Adapted from Universities and Colleges Admission Service (2003).

Fig 1.1 Benefits of RPEL programmes

Emans Oprins & Sandberg, 2001; Higgins, 2005; Li & Gunn, 2006; Martin, 2006; McLoughlin, 2003).

Furthermore, even though the business field is an area with high potential for experiential learning, it has received little attention from the literature (see Hamill & Sutherland, 1994; Newton, 1994, both focused on business schools) in comparison with other fields, such as nursing (e.g., Clarke & Warr, 1997; Donoghue, Pelletier, Adams & Duffield, 2002; Howard, 1993) or teaching (e.g., Cantwell & Scevak, 2004; Castle & Attwood, 2001; Taylor & Clemans, 2000).

This chapter tries to contribute to cover the gaps identified in RPEL literature, particularly the lack of guidelines on the implementation of RPEL programmes in specific educational settings, such as management education or online programmes. The RPEL programme developed in a Spanish virtual university will be used throughout the article as the basis for further reflection on the design and implementation of RPEL in online post-graduate education in the business field. The first section explains the role of competences as a central theoretical foundation for RPEL. The context and characteristics of the RPEL programme at the UOC are described next. Special attention is paid to the key elements of the programme's design and to the practical aspects of its implementation. Finally, the results of the programme are assessed and general conclusions and suggestions for further research are discussed.

1.2 Competences as the Focus of RPEL

The RPL is based on an approach that revolves around learning outcomes (Cretchley & Castle, 2001), as it acknowledges the learning capacity achieved by the student instead of the formal paths that have led to the outcomes in question. RPEL programmes consequently acknowledge the fact that learning takes place through different kinds of experiences, such as working, training, reading, travelling, community involvement and family responsibilities, but do not come automatically with experience and may differ from person to person (Canadian Association for Prior Learning Assessment, 2006).

Learning outcomes are commonly expressed in terms of competences or skills and competences. In the Tuning Project (European Commission, 2002), competences are understood as a combination of attributes (as regards knowledge and its application to attitudes, skills and responsibilities) that describe the level or degree to which a person is capable of performing a given task. In this context, a competence or a set of competences means that a person puts a certain capacity or skill into practice and performs a task in which he/she is able to demonstrate that he/she can do so in a way that allows for the level of achievement to be assessed.

Following the definitions of the Tuning Project, the RPEL programme at the UOC held competences to include a number of elements that can be carried out and assessed:

- Technical competence (knowing and understanding): theoretical knowledge in an academic field.
- Methodological competence (knowing what to do): practical and operational application of knowledge to certain situations; the ability to precisely perform the tasks that are related to an academic discipline.
- Attitudes and values (knowing how to conduct oneself): values as an integral element of the way of perceiving and living with others in a social context.

A person neither possesses nor lacks a competence, but commands it to a varying degree, meaning that the three elements of competence can be placed on a continuum.

RPEL programmes focus on the recognition and assessment of all three forms of competence in relation to a specific discipline or professional area. Clearly defining the competences of which prospective students should show evidence is thus a central element of RPEL. It is also necessary to define a method for assessing those competences so that credit can be awarded. Those factors were incorporated into the theoretical framework of the RPEL programme at the UOC, as discussed later on.

1.3 Context of the RPEL Programme

Higher education is currently facing the challenge of adapting to new situations. One of the manifestations of such a challenge is the impact of the incorporation of information and communication technologies (ICTs) into educational processes and teaching and learning models. In particular, the experience presented herein consists of the study of singular nature and complexity of a specific case of the implementation of an RPEL programme in a virtual learning environment, in the context of a postgraduate programme of the UOC.

From its foundation, in 1994, the Open University of Catalonia has been geared to the offer of non-presence-based education. Its educational model revolves around an Internet-based methodology that provides students the resources and tools necessary for them to be able to learn, without requiring them to be physically present in a classroom or to coincide, in terms of time, with others involved in the educational process. This is achieved with the intensive use of ICTs, leading to a virtual learning process through the exchange of information in common virtual spaces. Consequently, academic objectives are accomplished in a flexible, continuous manner, which does not depend on coinciding in time or space.

The student is the centre of the pedagogic model of the UOC. The other key elements, consisting specifically of specialised consultants, tutors offering advice on academic matters, didactic materials with adapted formats and the continuous assessment system, are arranged around the student's requirements in order to facilitate his/her learning. In addition, a number of support systems make academic activity possible, namely the digital library, the

software that keeps information updated and the dynamics of interaction and participation through virtual classrooms. Social and academic relationships are established within this virtual environment in such a way as to facilitate the integration of the university community and to add value to the teaching activity.

The student-based model of the UOC blends well with RPEL philosophy. As Callis (1993, 32–33) stated: "One of the distinctive features of APEL is that it is designed around the individual learner. No two people have the same experiences, so no two people will present the same learning profile (...) An APEL service must, therefore, by definition be focused on the client: otherwise, it is not an APEL". The existence of a culture focused on the student was, then, a valuable driving agent for the implementation of RPEL at the UOC.

One of the aspects that distinguish the UOC model from presence-based HE is that virtual education fosters the use of technology in the relevant field of study. As technological competence is nowadays one of the critical, generic competences in all HE programmes and a common requirement of the workforce, the said feature of virtual education at the UOC promotes the smooth introduction of graduates into the labour market.

The RPEL programme was implemented in the Master in Human Resource Management (HRM) at the UOC, a 36-credit (540-hour) programme structured as a curriculum that allows students to access the courses that best suit their needs (see Fig. 1.2). At the same time, it facilitates the attainment of progressive degrees that eventually lead to the master diploma.

One of the objectives of the Master in HRM is to improve the fit between the abilities of students and the requirements of their present or prospective jobs. Accordingly, from its creation the educational content of the Master in HRM was described in terms of professional competences, referring to the knowledge and skills which permit the effective accomplishment of certain tasks (Prieto, 2002). The relevant learning outcomes were grouped into four courses, which were related to specific professional profiles in the field of HRM. As will be

Master in Human Resource Management	*1. Postgraduate course in Human Resource Administration*	1.a. Specialisation course in Techniques for the Administration of Human Resources
		1.b. Specialisation course in Labour Relations Management
	2. Postgraduate course in Human Resource Planning and Management	2.a. Specialisation course in Work Team Management
		2.b. Specialisation course in Instruments for Human Resource Management and Planning
	3. Final project	

Fig. 1.2 Structure of the Master in Human Resource Management

explained later on, the direct link of each course with professional competences greatly facilitated the implementation of RPEL in the Master in HRM.

Moreover, each course was modularised in quasi-independent units. This also favoured the implementation of RPEL, because it made possible that students took only those modules for which they had not established evidence of prior learning.

1.4 Implementation of the RPEL Programme at the UOC

The RPEL programme at the UOC is limited to postgraduate studies, as suggested by Spanish Quality Assurance Agencies for the University System, but can easily be adapted to graduate studies. The pilot programme was implemented in one course of the online Master in HRM as the first step in a project that would encompass all the postgraduate courses of the university.

The development of the experience was based on the definition and implementation of a methodology applied to virtual education, allowing for the integration of competences as a means of recognising the knowledge, skills and abilities of students at the time of their incorporation into the educational programme. The idea was to focus the project on the potential student as the central feature and main element of the process.

In the conception of this project, RPEL was defined as "the instrument that makes it possible for students to obtain academic credit based on the competences acquired during their professional activity, whilst contributing to certain projects, or through other experiences". Therefore, experiential learning was the object of recognition, leaving certified learning aside.

The programme aimed to achieve the following goals:

- To make the academic accreditation of knowledge acquired via professional experience possible.
- To foster skills and knowledge obtained in a non-academic context and to endow them with value.
- To add a distinctive feature to postgraduate education at the UOC.
- To promote a competence-based design in postgraduate degrees.
- To consolidate the applied orientation of postgraduate education in response to professional requirements, thus boosting the relationship between the university and the business environment.

1.4.1 Key Elements of the Programme

For the learner, RPEL involves describing experiences, reflecting thereon, identifying the learning associated therewith and providing evidence of the learning in question (Hamill & Sutherland, 1994). The role of the education

provider is to effectively support the learner and to manage the recognition process clearly and consistently.

All RPEL programmes need to design and coordinate four key elements, namely the course content to be included therein, the learning outcomes to be assessed, the evaluation method to be used and the assessment criteria to be applied. This section will examine the definition of those elements in the UOC programme.

1.4.1.1 Selection of Recognisable Course Content

A single course of the Master in HRM was included in the pilot RPEL programme, namely the first-level specialisation course called "Human Resources Administration Techniques". Furthermore, it was not possible to "exchange" the entire content of the course in question with previous learning. The criteria established for the selection of units or modules (and corresponding credit) were as follows:

- The programme did not apply to the introductory unit, which allowed for the contextualisation of the specialisation and for interaction with the rest of the group to begin.
- Units that made it possible to develop e-competences were not recognised, as that was regarded as being the added value provided by the institution.
- The programme applied to units in which there was clear equivalence between the competences developed thereby and those acquired in a professional environment. In turn, the said relationship facilitated the provision of appropriate evidence by the participant.

1.4.1.2 Learning Outcomes to Be Assessed

The units from the curriculum of the first course that were identified as being recognisable through the RPEL programme were linked to professional or personal competences, for each of which specific indicators were developed.

The competences corresponding to the professional environment to which the course is geared were set out in an RPEL table, where they were linked to specific competences in the areas of knowledge and understanding, knowing what to do and knowing how to conduct oneself, along with the relevant indicators and examples of pieces of evidence for those indicators. Questions such as the following were considered when designing the table:

- What sort of activities and functions does a staff administration and management specialist perform?
- Which tasks, responsibilities and functions corresponding to the professional environment are present in the content and objectives of the unit?
- What evidence proves that the student has developed certain competences?

Content	Competences	Competence elements	Indicators	Evidence
Recognisable course content.	Competences corresponding to the professional environment to which the course is geared.	What needs to be known to fulfil objectives? Competences in the areas of knowledge types: • Knowledge and understanding • Knowing what to do • Knowing how to conduct oneself	Tasks, in which the competence must, necessarily, be used.	Examples of pieces of evidence that can prove or demonstrate the existence of the indicator.

Fig. 1.3 Elements of RPEL design – The RPEL table

Content specialists contributed to the production of the RPEL table, which was structured as shown in Fig. 1.3. Through this framework, RPEL and the competence-based curriculum foster one another. On the one hand, the prior establishment of the competences linked to each module facilitated the identification of indicators and evidence. On the other hand, when examples of indicators and evidence proved difficult to find, it was a sign that the definition of competence was unclear, thus suggesting a reconsideration of the competence profile for the course.

Therefore, the RPEL table was the main tool for the construction of the RPEL framework. Once it was approved by the academic direction of the Master in HRM, it was offered to candidates as assistance for their portfolio development.

1.4.1.3 Assessment Method

To earn credit for prior learning, students must prove to the faculty that they are competent in the subject under consideration. As Kramer (2002, 118) explains, credit for prior learning is usually achieved in one of four ways:

- Standardised achievement tests: such tests consist of multiple choice examinations that analyse learning equivalent to introductory college courses. To obtain credit, the student must answer a minimum number of questions correctly.
- Team-assessed training: providers of training courses contact a specialised institution with a view to the latter evaluating and recommending equivalences as regards college credit for the training developed by the former. Expert evaluators review course content in important instructional areas and

make recommendations for college credit. Those recommendations may include the appropriate level of teaching and the number of hours thereof for learners per semester.

- Course challenges: such challenges are usually developed and supervised by individual institutions and may include interviews, tests or skill demonstrations. In many institutions, challenges require that students demonstrate competency by taking the final exam for a course. In other schools, students may be able to arrange an interview, during which a member of teaching staff asks them to explain concepts and issues which they would have to know to receive a pass grade.
- Experiential portfolio assessment: such assessments involve the appraisal of a notebook or portfolio of evidence of university-level learning in a particular subject area (it should be noted that this is "learning", rather than "experience"), supported by an essay.

Prior-learning portfolios were chosen as the assessment method in the UOC programme. They are the most common method of assessing learning acquired previously (Joosten-Ten Brinke, Sluijsmans, Brand-Gruwel & Jochems, 2007) as well as the option that offers the greatest potential for credit recognition (Dagavarian, 2003). However, the development of such portfolios is the process that is most misunderstood by those who have not participated therein (Kramer, 2002), and also the most time-intensive option where assessment is concerned.

1.4.1.4 Portfolios Within the UOC Programme

Within the UOC programme, portfolios included four sections that students had to prepare in detail:

- Professional objectives that the student wished to fulfil with as much specific information as possible.
- Detailed curriculum vitae, which differed from the curriculum used for selection processes in the labour market. Emphasis had to be placed on aspects that showed that the student had certain knowledge and/or skills related to the programme.
- Extended reflective writing regarding skills and abilities acquired through prior experience. The student was asked to identify and describe the acquisition of knowledge and competences in areas determined by his/her experience, relating them to the content of the units.
- A collection of physical evidence that showed that the student actually had the aforementioned competences. The student was required to provide documentation accrediting his/her possession of the competences described in the previous section. Evidence of knowledge included in a portfolio can vary according to the subject in question. In the case of the RPEL programme for the Master in HRM, evidence most frequently took the form of samples of work undertaken, certificates, licenses, reports, job descriptions, CVs,

performance assessments, employment records and letters of recommendation or of verification.

1.4.1.5 Assessment Criteria

Once the portfolio was completed, it was assessed by the appropriate faculty, which determined whether the student should receive the credit he/she had requested on the grounds of the portfolio or not, being indicative of work that would be expected to form part of the relevant course. In accordance with Nyatanga and Forman (1998) general criteria for evidence offered by applicants with a view to obtaining credit, such evidence was required to be sufficient, authentic, current and valid in relation to the established learning outcomes.

Three additional criteria were used in the assessment of evidence, applying the guidelines offered by Zucker, Johnson, and Flint (1999):

- Credit should only be awarded if knowledge was demonstrated. Experience, by its own, was not susceptible of recognition.
- The level of acquired knowledge had to attain the university level (HE); however, it did not need to be excellent, but sufficient.
- The acquired knowledge had to show the appropriate equilibrium between theory and practice, according to their relative weight in the course learning outcomes.

1.4.2 Programme Administration

The structure of the RPEL process made it necessary to manage the progress of the student over different stages, which were designed to ensure his/her success and were adapted to a virtual learning environment. In this sense, the specific methodology of the UOC was applied to the administration of the RPEL programme, using the various technical and methodological resources adapted to a context of non-presence-based learning.

A distinction should be made between two clearly contrasting stages in the administration of the programme. Firstly, there was an initial stage during which students were given advice regarding the nature of and the procedure entailed by the programme. In this stage, a self-assessment test, which served as a support tool for assessing the suitability of opting for RPEL, was distributed to the participants who wished to receive it. The second stage consisted in the development of the programme: the RPEL programme began in the virtual classroom; the students prepared their portfolio and compiled evidence, with the support of a tutor; and, lastly, appraisal was carried out by the Assessment Committee. Further information about each of the stages is given below.

This process was designed with the purpose of enhancing transparency in all the stages. As Joosten-Ten Brinke et al. (2007) highlight, when transparency is

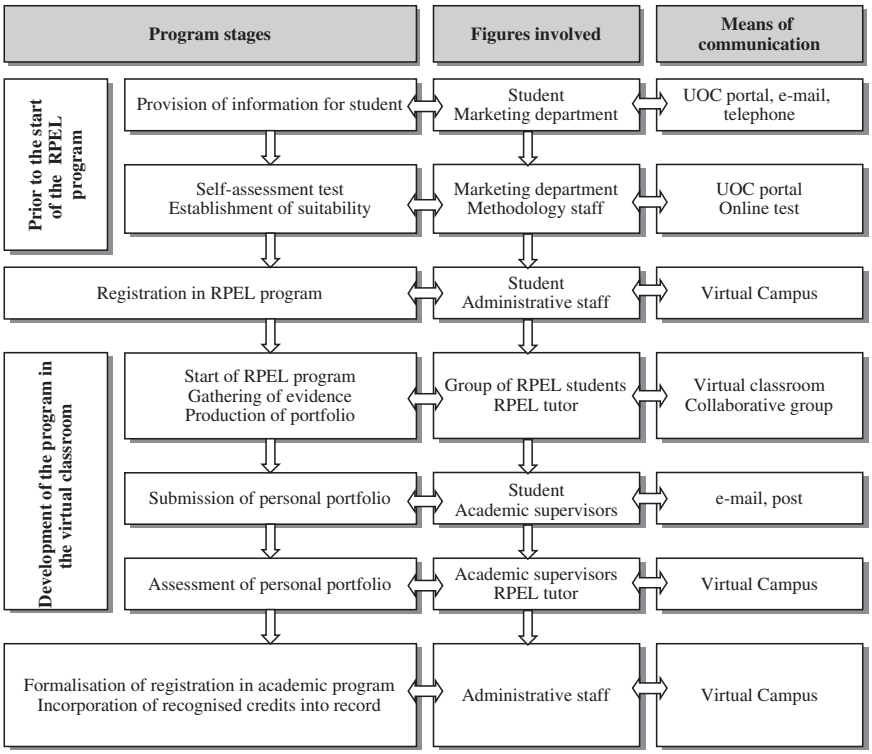

Fig. 1.4 Implementation of the virtual RPEL programme at the UOC

guaranteed, acceptance and fairness of the process will increase, since all members involved will understand their roles and their expectation of the procedure will be realistic.

Figure 1.4 shows the stages of implementation of the RPEL process designed for UOC's virtual environment, along with the figures involved and the means of communication in each stage.

1.4.2.1 Communication with Prospective Students

The possibility of gaining credit through an RPEL programme can serve as a useful means of increasing interest among potential students, even if they do not eventually enrol in the programme. For this reason, information about the programme at the UOC was prepared and passed on to the Marketing department.

The information provided explained the concept, process and benefits of RPEL for the candidate. It was published in the UOC portal and could be used by the Marketing staff in order to inform potential students.

1.4.2.2 Self-assessment of Candidates

The self-assessment tool developed after the definition of competences for the course and the corresponding indicators enabled students to gauge the likelihood of their previous learning gaining recognition. The list of indicators for each competence was set out as a multiple choice test, so that students could choose among different levels for each indicator.

As RPEL is a time-consuming process, the self-assessment test was considered as a key tool to ensure realistic expectations among candidates. Hence, it contributed to the goal of transparency, while providing a better understanding of the student's own learning and leading to increased self-knowledge and increased self-confidence (Joosten-Ten Brinke et al., 2007).

1.4.2.3 Programme Development

The experiential portfolio was developed by the students with assistance from a prior-learning specialist, dubbed a "tutor" in the UOC programme. In addition, the students involved in the RPEL programme shared a virtual classroom, where they could discuss their doubts and progress as regards portfolio preparation. This was the lengthiest phase of the procedure, with a total duration of 1 month.

The goal of portfolio building, as understood at the UOC, is not only to assess the candidates' claim to have already achieved learning appropriate for advanced standing in the programme of study, but also that the learners "reflect on and assess their previous experience, identifying in a coded way the learning that derived from it" (Trowler, 1996, 18). The tutor played a key role in this process and thus had an in-depth understanding of the RPEL programme objectives and procedure in order to communicate those aspects to students adequately. He was also proactive in detecting any kind of obstacles that students might encounter during the rather demanding tasks they had to accomplish: firstly, systematic reflection on experience through the expression of significant learning in concise statements, to serve as a formal claim to certain skills and knowledge; and, secondly, the collation and organisation of evidence to support such claims in a manner that could facilitate assessment (Hamill & Sutherland, 1994).

Interaction between the tutor and the students, and among students engaged in the programme, took place in a virtual classroom and via e-mail. The virtual classroom at the UOC provides two separate spaces for asynchronous communication. On the one hand, the board was used exclusively by the tutor in order to give general instructions and to pace the students' work, with the aim of having their portfolios completed on time. On the other hand, the forum was set up as a peer support medium, through which students could post questions, share experiences and support each other in the process of identifying and gathering evidence for the portfolio. Additionally, e-mail was used by the tutor to send individual feedback and reply to particular inquiries by students.

1.4.2.4 Credit Recognition

The portfolio was finally assessed by the executive and the academic directors of the Master in HRM, with the support of the tutor. The recognition process took place for each unit, meaning that between 0.5 credits (equivalent to the shortest module) and 5.5 credits (representing 15.2% of the total number of credits of the Master in HRM) could be incorporated into the record of a student. Credit recognition was always performed on the basis of the sufficiency thereof, and recognised credits were designated as such in the academic record of the student.

Recognition of one or more units led to a personalised learning route, as the student only had to participate in the parts of the course for which no prior learning was demonstrated.

1.5 Programme Assessment

The pilot implementation of RPEL in the Master in HRM achieved its main goals, which were basically of academic and pedagogical nature, and offered additional insights into technology- and organisation-related areas. The project showed the potential of RPEL as a means for promoting a competence-based design in postgraduate degrees. The construction of the RPEL table, together with the real-life examples provided in the students' portfolios, fostered reflection about the suitability of each unit of the course towards the goal of developing professional competences in accordance with the requirements of the business environment.

At the same time, the project confirmed that RPEL can be successfully implemented in online postgraduate programmes. Virtual media were used in each stage of the RPEL procedure, except for some telephone communication in the initial information phase and for the submittal of the physical evidence of the portfolio. Before the learners' enrolment in the programme, the online self-assessment test contributed to the creation of realistic expectations among candidates, providing them with a hint as to the type of indicators and evidence that would be relevant for recognition. During the programme, the online campus made possible the dynamic, contextual adaptation among the learning activities and the learners' own background.

The tools used, along with the tutorial activity developed in the virtual classroom, permitted to secure what DeWolfe Waddill (2006) points out as necessary design elements of web-based instruction, namely perceived flexibility, community creation, learner control and facilitative approach from the instructor. A sense of perceived flexibility was created by the asynchronous and time-independent setting, as well as by the loose guidance by the tutor, who suggested goals and steps towards the completion of the portfolio instead of establishing a tight calendar and giving strict instructions. Besides, online social interaction in the virtual forum encouraged community development, reducing

the possible sense of isolation among students. Before and during the process, the participants were also provided with resources on a just-in-time basis in order to yield more control to them, an aspect that is considered particularly necessary in ill-structured processes (DeWolfe Waddill, 2006), such as the development of a prior learning portfolio.

However, current technology offers superior possibilities for RPEL than those used in the pilot programme. For example, e-portfolios could be implemented in order to simplify the process of presenting evidence and to improve feedback by the tutor and the assessment team. Additional means for collaborative virtual work could also be useful so as to improve tutor and peer support. In the same vein, synchronous communication tools could be used in the virtual classroom (see Li & Gunn, 2006), especially in the initial and last phase of portfolio elaboration, when the students need more support by their tutor and peers.

The pre-existing instructional design of the course, with a structure of quite autonomous modules, was positive for RPEL implementation. This structure allowed the recognition of specific segments of the course, and the subsequent arrangement of limited access for the student to only those modules that had not been recognised. RPEL can thus be considered a key piece of a model focused on the student, as it results in the design of personalised learning routes that avoid unproductive relearning of existing knowledge.

Turning to organisational aspects, some values that characterise the UOC's organisational culture facilitated the implementation of RPEL. On the one hand, RPEL is only meaningful, if understood as a personal process of reflection and information gathering by the student. The student-based pedagogical model at the UOC already included the figures of the tutor and the consultant professor – the first focused on guiding the student through the entire academic journey and the second on facilitating the learning process of a particular subject. This naturally led to the creation of the new figure of the RPEL tutor, with the function of dynamising the participant's RPEL activities and collaborating in its assessment. Online tools assist the tutors in their task, since they can efficiently combine generic communications on common interest issues with personalised attention to individual problems. On the other hand, the positive view of change in UOC's culture made the project possible, since the faculties involved were open to the different way of "thinking about learning and assessment, and about what could and should be assessed" (Joosten-Ten Brinke et al., 2007) that RPEL implies.

The pilot programme suggested ways of improvement for the future RPEL system. First, it proved essential to review the estimated time required for each stage of the procedure, necessarily taking into account the importance of the learners' personal development throughout the process. The portfolio elaboration phase, in particular, was completed in 1 month, but comments by the students and the tutor suggested that it should be extended in the future. Second, it will be necessary to develop templates for the assessment of portfolios in order to increase its reliability. In the pilot programme, the small number of

students involved permitted reflective assessments by the tutor and the academic director, taking into account similarities and differences among learners. However, if the RPEL programme is to be extended to many other courses, more reliable assessment tools should be developed.

The lessons learnt in the pilot programme are currently being used for the subsequent design of the RPEL system at the UOC. Moreover, the positive results of the project, together with the improved view of RPEL in Spanish HE by academic and political authorities, have led the University to consider extending RPEL not only to all postgraduate programmes, but also to undergraduate degrees as soon as legal developments on this subject are approved.

1.6 Conclusions and Future Research

RPEL is a necessary feature if lifelong learning policies are to be fully accomplished. Within this framework, salient settings for RPEL development can be found in HE institutions providing online programmes, where adult students with prior professional experience are increasingly present. The case study of the RPEL programme in the online Master in HRM at the UOC suggests ideas for educators interested in implementing RPEL in their institutions, as well as directions for future research.

RPEL requires a previous outcome-based or competence-based educational design, which in turn benefits from and makes possible the creation of an RPEL programme. To this end, the RPEL table, shown in Fig. 1.3, can be a valuable instrument in the design stage of the programme. This table sets a clear link among course content (modules), competences, indicators and evidence, which can be useful both to the academic direction and to students. When elaborating the table, the academic director and the faculty are compelled to check each unit in the light of professional activities related to the course. For students, the table can be a precious tool when they have to identify relevant evidence for their portfolio.

Institutions interested in implementing RPEL will need to allocate specific resources to this system, since new human and technological resources will be devoted to its design and implementation. RPEL experts should be appointed or be formally recognised and rewarded for their participation. It seems advisable to appoint a specific tutor for RPEL, instead of embedding RPEL into a faculty's regular workload, which would put pressure on faculties that might in response become unsupportive of RPEL. The tutor works with students to help them identify learning that is relevant to their goals, drawing on a process of online peer learning as well as individual analysis. Informational resources and peer support in the virtual classroom are necessary elements in the process, but the role of the tutor is the third essential piece of the learning triangle in online education (students-resources-facilitator). Consequently, tutors should be carefully selected

and trained. They have to be skilled online facilitators, as well as experts in the content and competences of the target course.

Resources also have to be devoted to information quality assurance. Prospective students need to have a precise idea of the work that they will have to undertake and the probability of their learning eventually being recognised. Thus, it is very important that information on the course be distributed and supplied to participants in a clear, detailed manner, in order for them to be aware of the benefits and the costs of the programme. For example, the University web should provide easy access to RPEL information, which should be expressed in user-friendly language, be visually appealing and include a clear description of the process and the steps that must be taken by the student (McLoughlin, 2003). A self-assessment tool with automatic feedback would also facilitate realistic expectations amongst participants. Additionally, all the staff involved – including academic, marketing and administrative personnel – should receive adequate training on the RPL principles and its procedures at the institution. By means of these practices, information provided to learners will be consistent throughout the organisation, and realistic expectations will be set, as regards the process and its potential outcomes.

Turning to technology, it must be said that, although technological considerations are important in any online setting, an RPEL system as the one described in this chapter does not require sophisticated implements in order to reach its goals. However, RPEL can benefit from devices that improve the interaction between the tutor and the students, as well as among students, thus reducing the sense of isolation and enhancing perceived control by students. In any case, technological means have to serve educational considerations and not the opposite way, thus enhancing the participants' development, while boosting the tutor's task instead of substituting for this role. Total automation of the RPEL process (for example, as described by Higgins, 2005) would not take advantage of the developmental potential of RPEL, although it certainly could fulfil the needs of a pure accreditation system, where competencies that have already been achieved can be exchanged for course credit.

As regards the organisational context, there is proof that RPEL is adequate for an institution, such as the UOC, with a pedagogical model that puts the student at its centre and that views change positively. However, other institutions with different models or cultural values could face barriers in implementing an RPEL programme as the one described. RPEL entails that the faculty is ready to question their assumptions about learning and assessment, tutors are able to work with students coming from diverse backgrounds, additional resources are devoted to RPEL activities (especially the personalised counselling given by tutors), administrative systems are able to admit individualised academic routes, etc. Additional research would be valuable to understand how organisational characteristics – such as culture or values – can influence the successful implementation of RPEL.

Finally, RPEL programmes face the significant challenge of acceptance in the labour market (OECD, 2005). If qualifications partly or fully gained

through RPEL systems are not accepted by employers, the value of the systems to the individual and to society will be diminished. Andersson, Fejes, and Ahn (2004) stated that confidence in the instrument is based on two factors, namely the method used and regulatory criteria. In this sense, it is necessary to develop reliable methods with a view to ensuring legitimacy. The gauging of knowledge and competences requires open, flexible methods. However, the said aspect could clash with the criterion of reliability of standard methods. Thus, there may be some conflict between the two objectives, namely fairly assessing the knowledge and competences of an individual, in the first place, and performing assessments that make it possible to draw fair comparisons between individuals, in the second place. It is therefore necessary to undertake studies that assess the balance between the two aforementioned aspects of the different RPEL methods.

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Chapter 2
Accelerating Learning through Gaming?

Lessons from Interactive and Online Gaming in Business and Business Education

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2.1 Introduction

Gaming, as a tool for learning in business settings and in business schools, is gaining importance. New interactive technologies enable innovative strategies for enhancing the learning experience and the learning outcomes. This development evokes the question: Can gaming, as a form of simulating business reality, accelerate learning? This question will be the topic of this chapter. We will present the impact of two economic games. We evaluate these games based on a Media Functionality Framework (Vernooij, Thijssen & Schermerhorn, 2001) developed from literature research on learning practices and media functionalities and disfunctionalities.

2.1.1 Brief History of Gaming

In contrast to common perception, video gaming is not new. The first computer game was designed by A.S. Douglas in 1952, as can be learned from PBS.org website with a timeline of the development of computer games: http://www.pbs.org/kcts/videogamerevolution/history/timeline_flash.html

And as early as 1958, we could play tennis with a computer, based on a game designed by W.A. Higginbotham. The father of computer gaming is considered to be R.H. Baer who registered patent 3.728.480 in 1968, which was awarded in 1973 and subsequently sold to Magnavox. Magnavox in turn released 12 games in 1972. Since then computer gaming has taken a flight with Atari, Magnavox Odyssey 2, and Sony Play Station 2 in 2000. Just recently, Microsoft entered the gaming market. The number of new game introductions since the year 2000 cannot be counted. Gaming has become part of daily activities. Gaming has also become a social concern, where games are

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portrayed to have a bad influence on child development. One of the claims is that violent games raise violent children.

2.1.2 Some Myths Debunked

A large gap (Jenkins, 2005) exists between the public's perception of video games and what the research actually shows. The following is an attempt by Jenkins to separate fact from fiction. It is quoted from the article with the title: *Reality Bytes: Eight myths about video games debunked*. The eight myths about video games concern: youth violence, scientific evidence for links between violent game play and youth aggression, children are the primary market, girls do not play computer games, war games teach kids to kill, video gaming is not a meaningful way of expression, games are socially isolating and they are desensitizing. Jenkins meets these arguments.

Henry Jenkins (2002) is the director of comparative studies at MIT and the unit recently entered into a joint venture on gaming with Microsoft with the name Games-to-Teach. As the gaming industry is booming, the research on gaming at universities lacks behind. There is no theoretical knowledge about gaming as a potential educational tool and little is known about the impact of gaming on learning. Gaming is often still associated with online entertainment. In education, where simulating business reality is often referred to as "serious gaming", gaming has taken a flight in the past ten years (Van Dijk & Keulemans, 2006). As we will demonstrate in this chapter, gaming is seen as learning by doing in a simulated business education setting using computers and networks and other technical tools for interactive practice. Traditional learning in lectures and books as opposed to "serious gaming" includes seeing, hearing, and reading in a passive way on the part of the student. "Serious gaming" engages the student fully with all senses and renders a better learning outcome according to the research of the educationist Edgar Dale at Stanford University regarding the Cone of Experience (Dale, 1946).

2.1.3 Gap Between Business and Business Schools

Teachers and researchers may adhere to the above myths about video games saying that games are not a meaningful way of expression and therefore avoid learning about the positive potential use of gaming in educational settings. This may even increase the generation gap between students and teachers. The new generation learns in a different way, and most business schools continue to hang on to the traditional teaching methods in classrooms, transferring knowledge through lectures. Business schools are more

and more criticized for being detached of business reality (Bennis & O'Tool, 2005), and therefore accused of not providing the competencies required by modern business. Many businesses today require online skills to communicate, work collectively on a project with a (virtual) team, and create new business models to generate value with and for clients, through the use of new social software technology. It is proposed that gaming can contribute to the development of these competencies and accelerate learning.

2.1.4 Gaming as a New Technology

New technologies enable new forms of business and innovative ways of teaching and learning, reaching business and learning objectives that traditional media do no cater for. In 2001, a conceptual framework was presented (Vernooij, Thijssen & Schermerhorn, 2001) to guide the process of decision making in designing innovative education. It regards the development of effective learning environments by focusing on two sides of the construction process. The concerns side one the media and their functionalities (both activated and potential) and disfunctionalities. Functionality can be described as the quality of being suited to serve a purpose well. In the case of media (new and old) for education and learning and their functionalities, we study the quality or lack of quality of media to be able to reach learning objectives. The other side is the exploration of three types of learning activities: cognitive, regulative, and affective. Based on these two sides of the construction process, we are in the pursuit of an optimal mix of media, traditional and new to accelerate our learning activities. Our central research question at that time was: "What combination of media offers an optimal mix of learning functions to support the learner's activities, necessary to reach his or her desired learning outcomes? ".

Considering the characteristics of the media, the design of a new instruction environment is not just the choice of a new mix of media, but the choice of functionalities and disfunctionalities of these media. In other words, do these media show qualities to be able to reach existing and/or new learning objectives? The crucial point in innovation is exploring the potential functionalities that a new medium has. The most professional group to advise about that in an educational environment are the students themselves. They bring in their experiences with new media, and all of their disappointments with learning environments can be transformed into information and knowledge about potential functionalities. In this way, we may bridge the first gap mentioned earlier, the generation gap between students and teachers. So we suggest that students can be co-designers of meaningful learning environments, based on their hands on experience with functionalities and disfunctionalities of new media enabling learning activities.

2.1.5 The Innovation Matrix

To introduce new learning, it is important to become aware of what a learning medium can attain (functionality) and what it cannot attain (disfunctionality). Each learning medium has potential opportunities to support the development of certain learning outcomes. The point is to become aware which disfunctionalities the existing learning media have, causing the exclusion of important learning outcomes. In other words, if some learning outcomes are not attainable with existing media, they are excluded from the curricula. The surplus value of new technologies is to be found in the incorporation of new learning outcomes that where unattainable with the existing media. Fig. 2.1 shows the relation between media and learning outcomes as presented in an innovation matrix (Vernooij, 2002).

Innovation matrix	Traditional learning outcomes	New learning outcomes
Traditional media	Traditional education	Spin off
New media	Efficiency trap	Innovative education

Source: Adapted from Universities and Colleges Admission Service (2003).

Fig. 2.1 The innovation matrix

If traditional learning outcomes are taken for granted and new media are incorporated with the idea that nothing changes the learning outcomes of the learning process, the introduction of new media may fall in the efficiency trap. The most important aim becomes the replacement of man power by computer power in order to save money. However, new media offers the opportunity to attain learning outcomes that are unattainable with traditional media, offering the possibility to create innovative education. Quite often, opportunities are discovered to attain those new learning outcomes as well with the traditional media. That results in a spin off, enriching traditional education. The awareness of the innovation matrix opens the opportunity of combining traditional and new media in a way that traditional and new learning outcomes can be attained.

2.1.6 Pedagogy: The Characteristics of the Learning Process

In traditional learning, the assumption prevails that education is essentially the transfer of knowledge from an external source to the learner. This opinion is increasingly under pressure. More recent theories, like the constructivist theory, state that learning is not a passive "absorptive" process of knowledge but an active, constructive, and self-regulated process of the learner (Bednar et al. 1991). To bring about this construction of knowledge, students need skills to guide this process or in other words: "they need to learn how to learn" (Boekaerts, 1997; Boekaerts & Simons, 1993).

New learning must be introduced in stages: guided learning, experiential learning, and action learning (Simons, Van der Linden & Duffy, 2000). Aims of new learning include the acquisition of learning, thinking, and regulation skills (Ten Dam, Vernooij & Volman, 2000). This approach makes it possible to work on the development of competencies (Stoof, Martens & Merrieënboer, 2001).

Vermunt (1992) argues that the quality of higher education hinges on the quality of the learning processes that students deploy. This implies that not only *instruction theories*, but also *learning theories* have to be taken into account when designing effective educational experiences.

Thus, there are two sides to learning, namely learning theories (demand side) and instruction theories (supply side). Vermunt (1992) combines these into a coherent learning theory, in which the activities that students deploy are central. Gradually the students must take over the activities of the instruction and start instructing themselves. He divides the activities that support the learning process into three domains:

- Cognitive domain: mental activities that lead to learning results such as knowledge, skills, and competences.
- Regulative domain: mental activities focused on the coordination and control of learning processes.
- Affective domain: attribution of emotions that occur during learning activities. They influence the motivation and self-esteem of the students and enhance or constrain the cognitive and regulative functionalities.

According to Vermunt (1992), all activities can be undertaken by the student or by the teacher. For instance, teachers can try to motivate their students, but students also can try to motivate themselves, just like employees must do, once they are in a job.

In the same way, the learning processes can be guided internally or externally. Internally means that the students have an intrinsic motivation driven by personal interests. Externally means that the content of the course and the learning process is tightly controlled by an external source. This can be a teacher, but also a peer-group or a fellow student. As an example of structuring the study of a book as a traditional medium, the teacher can prepare summaries or can leave this to the student.

2.1.7 Technology, Pedagogy, and Innovation

We introduced the concept of technology and pointed out the functionalities, either activated of potential, and the disfunctionalities of media. In the previous paragraph, we introduced pedagogy and pointed out the different learning processes such as cognitive, affective, and regulative processes. In constructing an innovative learning environment, these two (media and learning processes) must be bridged in an adequate way.

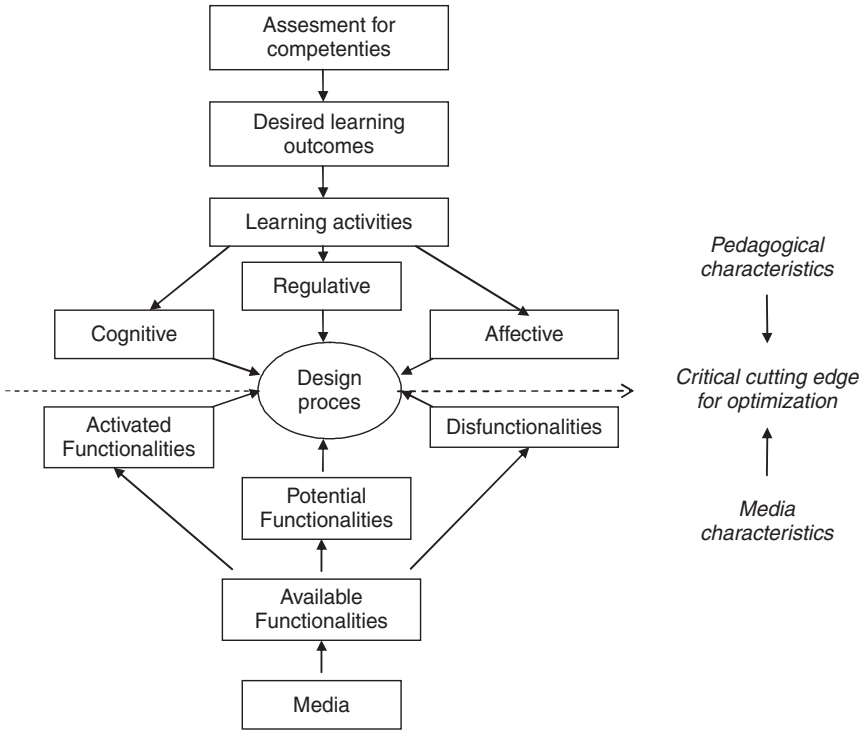

Fig. 2.2 The media functionality framework

The *media characteristics* meet the *pedagogical characteristics* at a critical *cutting edge,* as depicted in Fig. 2.2. The top half of the figure shows the (desired) learning outcomes, which have to be translated in learning and (self) instruction activities to attain them. The bottom half depicts the media characteristics.

We will use the Media Functionality Framework (as shown in Fig. 2.2) as a model for our research. In Section 2, we explain the purpose of the research, and in Section 3, the research methodology of our case studies. In Section 4, we will provide an overview of two cases and discuss findings in Section 5. Finally in Section 6, we list the implications for innovative education, learning, and innovative business.

2.2 Purpose of the Research

The research at hand can be seen as exploratory research as there is only an emergent body of academic knowledge about the use of new media, such as gaming, in educational settings. The gaming business, however, has over 50 years of experience. So, we draw from experiential knowledge, e-learning

developers, professional training consultants, and commercial businesses to describe and explain learning experiments with games. The purpose of the research is to generate both presentational knowledge and propositional knowledge on the topic of gaming and accelerated learning. If we can prove to teachers, researchers, students, and practitioners that gaming does indeed accelerate learning and increase business effects, a wider introduction and adoption in Business Schools and Business may be the effect of it.

2.3 Research Methodology

Experiments and case study methods are generally accepted as tools for exploration and theory development (De Vries, 2003; 1994). This is a multiple embedded case study (Yin, 1994). We studied two different cases (see Table 2.1).

We use multiple data sources for data collection, and as such it is a hybrid approach between concept development, experiments, and case studies. Sources used are an extensive literature review, interviews, workshops, training, management meetings, reflection meetings, documents and files of the cases, and consultancy reports. The complementary use of these data sources is quite usual in case research (De Vries & Roest, 1999). The data collection approach differed per case site, and the purpose of each case presented is to explain theory development and practice development. On the part of accelerated learning, the cases are described based on hands-on information and experience with the cases by the authors and full access to all information sources at the case sites and includes direct observation and participant observation.

The case studies will be described according to the Media Functionality Framework in Section 4 and findings are discussed Section 5. Conclusions will be drawn and recommendations will be made for further research. The implications for business schools and business will be formulated in Section 6.

Table 2.1 Overview of Case studies

Site	Unit of analysis	Level of analysis
Case 1: Free University	Entrepreneurship game for students at the Free University, called *Economy Class*. The game is based upon entrepreneurial trading practices and includes the actual trading by students in an interactive digital environment	Individuals and teams of students in the age group of 20–25
Case 2: Syntens/ Boertien Training	*Innovation Game* for professional innovation consultants working for the Dutch Government to advise small and medium size enterprises in matters of growth, innovation, and innovation capabilities	Individuals and teams in the age group of 38–60

2.4 Cases

The first game is an entrepreneurship game for students at the Vrije Universiteit, called *Economy Class*. The game is based upon entrepreneurial trading practice and includes the actual trading by students in an interactive digital environment. Based on the assumptions of market characteristics and expectations about the behavior of competitors, entrepreneurial decisions are made according to the cycle of planning and control. Prices are set to compete and gain competitive advantage and make profit.

Students learn to apply costing in an interactive environment, both as an ex-ante activity and an ex-post activity. They predict their own results and are confronted with the actual results, thus allowing for an evaluation of the strategy chosen. The didactical structure allows students to practice entrepreneurship in a dynamic digital environment, developing entrepreneurial competencies and practicing tools for decision making under uncertain conditions.

The second game is an *Innovation Game* as part of a course for innovation consultants of the Dutch Government. The innovation game is based on LEGO Mind Storm and the consultants take on different roles: entrepreneur, consultant, marketing and finance, design and production, and ICT. Two teams identify market trends and consumer needs, develop a product idea and a concept, develop a marketing and financial plan, build a prototype in LEGO Mind Storm with intelligence on board and present it at 5 pm on the same day to the group of participants. The innovation game is reflected upon and learning points are explicated.

The hypothesis is that interactive experiences have greater impact than one way communication as in traditional instruction.

Case descriptions

For the description and explanation of the two cases, we will follow the Media Functionalities Framework. For this purpose, we translated the model into a table as shown in Table 2.2. For an analysis of the cases, it is considered important to make an extensive analysis of all the elements that are mentioned in the framework. However, such an analysis is too extensive for the question we tackle in this article. For that reason, the analysis is restricted to a general

Table 2.2 Media Functionality Framework

Pedagogical characteristics	Media characteristics
Assessment for competencies	Media selection
Desired learning outcomes	Suitable functionalities
Learning activities:	Functionalities:
☐ cognitive	☐ activated functionalities
☐ regulative	☐ potential functionalities
☐ affective	☐ disfunctionalities
Design of learning process	Design of learning process
Evaluation	Evaluation

description of learning outcomes that is common for the two games. As far as the learning activities and the media are concerned, we offer a short overview of details according to the extensive data sources available to us.

The term "evaluation" is added to be able to describe and explain the effects of the learning process based on empirical findings. Below, we will describe and explain each of the two cases.

2.4.1 Case 1: Economy Class

2.4.1.1 Pedagogical Characteristics

□ **Assessment for competencies**

The game is used as an introduction in Marketing and Accounting. So, only general competencies are required as a prerequisite: a basic general knowledge about buying and selling on a market and basic understanding of communication.

□ **Desired learning outcomes**

The learning outcomes are related to the role of an entrepreneur to perform the Cycle of Planning and Control in his business:

- the competence of formulating and reconsidering goal and strategy of the company,
- the competence of operationalizing goal and strategy into targets and decisions,
- the competence of estimating the results (like net profit) under chosen conditions,
- the competence of computing the final results and comparing them to the estimations.

But an entrepreneur must also be able to communicate and has to develop:

- the competence of participating in teamwork,
- the competence of presenting the results both verbal and written,
- the competence of learning from experiences.

□ **Learning activities**

Students operate as teams performing the role of an entrepreneur in a market where they all buy and sell the same product (i.e., sun glasses). They sell their product via Internet and compete on this one product in a market of maximal 10 companies. Each team has access to an online program and has certain time to take decisions and estimate the results. It is up to the instructor to set the deadline. The program is interactive which means that teams are guided through the cycle of planning and control depending upon their own choices. They get feedback on every step and a new instruction how to continue.

- *Cognitive*

As far as marketing is concerned, the availability of the marketing mix and the correct way to use it is the most important activity. As far as accounting is concerned, the way to compute net profit and market share are important as well as supporting computations like stock and accumulated profit.

- *Regulative*

Important skills are the use of spreadsheets to explore the relations between variables under different conditions and expectations. Further more, the planning process is important as well as the ability to evaluate the results by comparing them to the estimations and distilling incentives for decision making in the next cycle.

- *Affective*

The most important attitude to be developed is to take decisions and to cooperate with other people in order to get the optimal results. Then, there is a presentation of the company in written reports and personal presentation in verbal reports.

2.4.1.2 Media Characteristics

□ **Media**

The media used are Internet (both browser and MSN), game, spreadsheet, and PowerPoint.

□ **Suitable functionalities**

For each medium, it is possible to describe the most important functionalities why it is chosen. Of course the game is the central medium, which evokes the use of other media. In principle, the game Economy Class can be performed simultaneously in a computer room, but it is also possible that the teams play at separate locations and at separate times. It is even possible that members of a team play from different computers at the same time as the game has a multiple entrance facility per team.

As spreadsheets are important in companies, the game is created to support the use of spreadsheets in their natural environment. As the cycle of planning and control is performed several times, the usefulness of a spreadsheet to optimize and to compute the final results is to be discovered by the students.

- *Activated functionalities*

- On line connection with the game.
- Immanent instruction and planning of the learning process.
- Immediate reaction on all the student actions performed.

- Screens with information to call upon when needed.
- Ability to present dilemmas as part of the decision taking process.
- Ability to split up computations as part of the feedback process.

  - *Potential functionalities*

Students expect a lot of action in a game, but that is (for financial reasons as well) impossible to build into a learning game. So many visual and action effects are lacking. A separate style must be developed where a balance is found with the experience of students elsewhere.

  - *Disfunctionalities*

- A learning game represents reality, but simplifications must be made in order to be able to control the situation. Options that are available in reality are excluded as part of these simplifications.
- A deadline procedure must be used, but this requires waiting until the final results are there.

2.4.1.3 Design of Learning Process

- ☐ Teams are presented with the cycle of planning and control, and they will have to take decisions and make the computations as required by the program.
- ☐ Goal and strategy can be evoked and later on be used in evaluations of the results of a team. A wide range of goals (even wrong goals) can be accepted by the program and used as basic material for feedback.
- ☐ The possibility of evaluating every step and adding information about the computation make it possible to start with the ultimate question in estimating the results: How big will your profit be? or how big will your market share be?
- ☐ In every computation, mistakes can be made, but as the program knows all the decisions and expectations it can react not only on correct answers but also at predictable mistakes.
- ☐ Every cycle an evaluation is made and after a chosen number of cycles the evaluation is presented to other teams and to the instructor.

2.4.1.4 Evaluation

The Economy Class game engages students in a full Planning and Control business cycle. Students learn to work together in defining a goal and a strategy and make decisions using spreadsheets to make calculations. The desired learning outcomes of operationalizing goal and strategy into targets and decisions (right or wrong) are fully realized, as are the competences of estimating the results under chosen conditions and computing the final results

and comparing them to the estimations. Particularly, entrepreneurial competences are exercised as participating in teamwork, presenting the results both verbal and written. Reflecting on the results enables students to learn from the experiences of the game.

2.4.2 Case 2: Innovation Game

2.4.2.1 Pedagogical Characteristics

□ **Assessment for competencies**

The assessment of competencies is to be conducted by an expert team of innovation consultants. They defined that the competencies of the innovation consultants need to stimulate growth, innovation, and innovation capabilities on the part of the small and medium size enterprises in the Netherlands. The competences required are as follows: (1) knowledge about innovation processes, (2) stimulating the entrepreneur to innovate, (3) teaching innovation, and (4) supporting innovation.

□ **Desired learning outcomes**

The Innovation Game is a game to be played at the start of a seven-day innovation consultancy course and is intended to allow participants to play and experience various roles, such as the entrepreneur and staff members as marketing and finance, design and production, ICT and the role of innovation consultant. The desired learning outcome is the *experience of fun and excitement in working as a team to realize an innovative product prototype in just a few hours. Other goals are: Understanding each role and the importance of communication; understanding the role of innovation consultant to be negotiated with the entrepreneur and to focus on the process of innovation and not on hands on work*.

□ **Learning activities**

The Innovation Game starts with a creativity exercise in teams of five, just to warm up and set the stage. Then the consultants are asked to pretend that they are responsible for a company named Legoistics, successful in designing and marketing gadgets. The teams are up to eight members and the roles are assumed. The instruction is through Power Point by the instructor. The start is around 12.00 o'clock and the team is put under pressure because they have to present their innovative gadget at a simulated trade show around 16.30 hours.

Then the team is on their own with traditional media as flip charts, a classroom, and new media as Internet and Lego Mind Storms. The product prototype has to be built in Lego Mind Storms with intelligence on board (software to be programmed to perform certain defined tasks).

- *Cognitive*

The team generates ideas about market trends and consumer needs. Analysis of the competition is carried out through the Internet. They identify potential market segments for a new gadget and the specific market needs. From a wide range of new product ideas, one idea is selected.

- *Regulative*

Team members take on the above roles and have to regulate and coordinate the innovation process by themselves.

- *Affective*

During the innovation process, most teams perform a brain storm session and have a lot of fun in sharing ideas and concepts and enjoy their respective tasks. In some teams, the consultant does not negotiate his/her role in the innovation process with the entrepreneur. In the 23 times the Innovation Game has been played, three consultants where "fired" before they could even start.

2.4.2.2 Media Characteristics

□ **Media**

The game offers a rich combination of old and new media, such as the classroom setting, a flip chart, access to Internet, Laptops, and the use of Lego Mind Storm (intelligent Lego bricks with programmable software).

□ **Suitable functionalities**

- *Activated functionalities*

Participants can write ideas on a flip chart, and face-to-face contact generates a number of trends in consumer needs and develops original concepts. Searching for information on the Internet accelerates the learning process, and pictures and photographs are collected to visualize the ideas and concepts in a Power Point presentation. With the use of Lego bricks and intelligent software, a prototype of a gadget can be built and demonstrated.

- *Potential functionalities*

Each of the mentioned media has a range of functionalities. Instructors and participants can choose which functionalities to use and which not.

- *Disfunctionalities*

Lego Mindstorm has limited functionalities. So the prototype created will have limited functionalities as well. Role-playing is not always perceived as real; consultants play the role of the entrepreneurs or employee when in fact they are not. As consultants know each other well, they naturally accept a leading role for the innovation consultant in leading the innovation process. The

instructor is present and intervenes sometimes when, for instance, the ICT person is ignored, which was the case in more than half of the 23 games played, thereby preventing the participants to fail in creating a working prototype.

2.4.2.3 Design of the Learning Process

The facilitator, through a Power Point presentation, instructs the participants. The first instruction is to brainstorm in groups of seven about trends in the market for intelligent gadgets and identify the major trends. The second instruction is to form a company and divide roles in the group (one person as entrepreneur, two persons on marketing and finance, two persons on product design, and one on software development and one as innovation consultant). The task of the group is to design and create, in a period of less than 4 hours, a working prototype of the intelligent gadget (using LEGO Mindstorm as a tool) and prepare a simulated trade show presentation.

The presentation should include the business proposal to tradeshow participants, the marketing plan, and a demonstration of the intelligent gadget. At the trade show presentation, members of other groups play the roles of venture capitalist, journalist or representative from retail and comment on the presentation and the new gadget. The comments are reflected upon to improve the product design. Formal reflection on the roles and teamwork uncovers lessons learned in the innovation process from trends, needs, product idea, product concept, marketing plan, and trade show demonstration and presentation.

2.4.2.4 Evaluation

The desired learning outcome is the experience of fun and excitement in working as a team to realize an innovative product prototype in just a few hours. Other goals are: Understanding each role and the importance of communication; understanding the role of innovation consultant to be negotiated with the entrepreneur and to focus on the process of innovation and not on hands on work.

Participants certainly enjoy "playing roles" a great deal and get fully engaged in the innovation process, often losing track of time. Teams that perform well develop both a clear vision on market needs as a group and a clear set of product requirements. Individuals find it easier to contribute from their specialist role when a common goal is clear. The reverse also appears true. Lack of common understanding hinders the contribution of specialists. The role of the innovation consultant is performed better when the entrepreneur and the innovation consultant communicate before, during, and after on what contributions are needed from the consultant. Innovation consultants perform worse when such communication is absent or implicit.

The innovation game demonstrates the fun and complexity of product innovation in a very short period of time. Under time pressure, participants learn to work together on developing a vision and a common goal, identify

opportunities for product innovation from trends, actually build a prototype and make a presentation and create a value proposition to potential buyers. They learn that innovation is fun and applying a diversity of talents in the creation process. An added advantage is that participants learn to know each other even better, thereby setting the stage for accelerated learning in the rest of the seven-day course.

2.5 Findings

The two cases studied indicate that games as a simulation of business reality offer functionalities for learning activities for students to gain experience in a number of business tasks in addition to acquiring subject knowledge. As such the pedagogy of games activates not only cognitive learning, but also regulative learning such as working in teams, creativity, decision making, and communicating. Perhaps, the main advantage of games as a way of learning is that students are affected and inspired. The activities are considered fun. They influence the motivation and self-esteem of the students and enhance the cognitive and regulative learning activities.

We have also noted shortcomings of the games studied. Popular games in the consumer market offer great graphic design as well as audio effects, and students have grown accustomed to high speed and special effects. The current state of gaming technology in entertainment and the use of computers and Internet raise the expectations of students for the functionalities of "serious games" as well. The games studied lack the characteristics of entertainment games. Also, some students find role-playing difficult (i.e., not real). Furthermore, working in groups in a game can have similar drawbacks as teamwork in other settings, where individual students are not always invited to contribute to the project at hand or do not take the initiative by themselves. The business game does not, by itself, overcome these problems.

After studying two cases, it is far too early for conclusions to be drawn. The evidence is limited. The question posed at the start of the article is: Can gaming, as a form of simulating business reality, accelerate learning? This question can only be answered after more extensive research. Indications, however, are that the games studied allow for a richer learning environment as compared to, for instance, traditional lectures where the student is generally a passive listener. In games, students can identify with the role of the entrepreneur and in doing that they come to another perspective in tackling business problems.

The main advantage of games is that students like them and have fun while they learn. This characteristic is used to support learning and experiencing the entrepreneurial approach. Games offer a way to get actively engaged in simulated business activities, and as such the subject knowledge is enriched with contextual knowledge (often lacking in traditional education) and more importantly with experiential knowledge and regulatory experience.

The conclusion of this exploration is that the serious games studied invoke learning by doing and by interaction. Students are in control of their own actions; they receive immediate feedback and acquire cognitive, regulative, and affective business skills faster and better than in traditional class room teaching where the student is often a passive listener and is not provided with opportunities to practice skills.

2.6 Implications for Innovative Education and Learning

Entrepreneurship, creativity, cooperation, and value creation are required business competences in today's dynamic business environment. It is hard to acquire these competences from textbooks or from traditional lectures. The pedagogical design of education in business schools can benefit from new media, such as games where indeed these competences can be practiced in simulated business settings. More learning outcomes can be part of the curriculum as more media with distinguished functionalities are available.

It is too early to prove to teachers that games do have significant advantages over traditional learning methods, because of the lack of empirical research on the topic. The two cases we have studied contribute to empirical evidence that indeed games accelerate learning as students are actively engaged and acquire more skills in a shorter period whilst enjoying the learning experience.

The main implication for innovative education and learning is that many more educational games and their impact will need to be studied to prove the proposition that games accelerate learning. We can, however, generate a number of recommendations for further research from our study.

1. The innovation matrix invokes the incorporation of learning outcomes as part of the construction of a learning environment. Learning outcomes cannot be taken for granted any longer as they are related to functionalities and disfunctionalities of a medium.
2. The Media Functionality Framework may offer a suitable frame for studying and comparing cases. It gives a list of items to incorporate in the study in order to get a complete research program.
3. Teachers are invited to experiment with games as a tool for learning and educating and share their experience. They must also be ready to think about the required learning outcomes of their teaching.
4. Also, students can be invited to design educational games as they have considerable gaming experience and ICT skills that often exceed the experience of the teaching staff. They, especially, are the experts to point at potential functionalities that remain unused because teachers may stick to the traditional perspective on learning.
5. By engaging students, teachers, researchers, and business professionals in the design and implementation of business games, all participants can benefit from the suggested accelerated learning as the gap between business and

business schools is being bridged when business cases are simulated to reflect business reality (relevance) as well as academic practice (rigor).

6. The audio visual functionalities of serious games can be improved to match the expectations of students from entertainment games, if business schools can be convinced that gaming delivers other learning outcomes in a faster way. Then they can decide to invest more time, money, and expertise in designing serious games.

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Chapter 3
Longitudinal Study of Online Remedial Education Effects

Bart Rienties, Dirk Tempelaar, Joost Dijkstra, Martin Rehm and Wim Gijselaers

3.1 Introduction

In Europe, heterogeneity of enrolled students has increased due to increasing internationalization in higher education, the introduction of the Bachelor–Master structure, and the new accreditation procedures of the Treaty of Bologna. In addition, an increasing number of higher education institutes is orienting towards the international market of bachelor and master students (Van der Wende, 2001). For example, at Maastricht University the percentage of foreign students following a bachelor in business has increased from 10% in 1996 to 60% in 2006. Given this recent increased heterogeneity of student enrolments in Europe, it is reasonable to expect that transitional problems from secondary education to university have become larger. The primary reason is that secondary educational programs in Europe are determined on a national level rather than on a European level (Van der Wende, 2003). In fact, differences in secondary educational programs across European countries are widespread. For example, in most European countries hardly any attention is paid towards statistics or economics, whereas in the Netherlands this is integrated in their secondary education. As a consequence, it has become necessary to design bridging courses, summer courses, or remedial courses to equip students with required knowledge before entering a program (Rienties, Tempelaar, Waterval, Rehm & Gijselaers, 2006; Wieland et al., 2007).

In the United States, remedial programs are common at both colleges and universities (Hart & Speece, 1998; Roueche & Roueche, 1999). Bettinger and Long (2005) argue that the goal of remedial education is to provide underprepared students with necessary skills and knowledge to succeed at universities. In other words, remedial education aims to bridge gaps in domain knowledge (e.g. mathematics, economics) and skills (e.g. reading, writing) in order to establish a smooth transition in the next step of a student's career. In the US, most institutes offer some form of remedial education and recent research indicates that more

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than 40% of traditional undergraduates participate in at least one remedial course (Attewell, Lavin, Domina & Levey, 2006; Kozeracki, 2002). The benefits of remedial education in the US are heavily debated yet recent findings indicate several positive effects of remedial education (Attewell et al., 2006; Bettinger & Long, 2005).

While remedial programs are common in the US, there is less of a tradition of remedial education in Europe. Nonetheless, in the last couple of years several European higher educational institutes have started to offer remedial education programs (Wieland et al., 2007). A main difference with the United States is the reason to offer these remedial programs. In the US, a common assumption is that remediation attracts underprepared students of low socio-economic status (Attewell et al., 2006; McCabe & Day, 1998). In contrast, in Europe a large part of the transitional problems are caused by differences among national secondary educational programs (Van der Wende, 2003) which hamper foreign students to effectively start a bachelor or master program.

As the number of foreign students enrolled into a European bachelor program increase, one reasonable response to facilitate foreign students in their transitional phase is to offer remedial education in a distance learning format. Information Communication Technology (ICT) has some powerful tools, which might benefit remedial education (McCabe & Day, 1998). Already in the 1980s, some small experiments with ICT in remedial education were conducted yet with limited results (Boyd, Keller & Kenner, 1982; Plomp, Pilon & Reinen, 1991; Smit, Oosterhout & Wolff, 1996). Recently, ICT has gained the power to support independent learning as well as to learn irrespective of time and geographical constraints with the wide-spread implementation of Internet (Bromme, Hesse & Spada, 2005; Jonassen & Kwon, 2001). In addition, ICT has some powerful tools for learning in collaborative settings where students work and learn together (Bryant, Khale & Schafer, 2005; Schellens & Valcke, 2005). In particular in a context of foreign students, offering remedial education in virtual settings has shown to be effective (Rienties et al., 2006). The perceptions of the learning environment by these students were found to be positive. In particular, the interactivity of these online courses as well as the possibility to work at one's one pace and time was considered to be a highly valuable characteristic.

While European higher educational institutes are increasingly using remedial courses supported by ICT to facilitate transitional issues of foreign students, to our knowledge no research has been done in order to determine whether participating in such programs lead to a smoother transition from secondary education to university. In this exploratory study, we aim to provide a first attempt to assess whether online remedial education helps foreign students to bridge the gap from secondary to university education. Therefore, the purpose of this study is to assess to what extent participating in an online remedial course positively influences study performance as well as study success of foreign students in an academic curriculum. In this longitudinal study, we will distinguish short-term effects (i.e., study performance on the relevant course the

remedial course aims to bridge) from long-term effects (i.e., study success after 1 year) in order to test the effectiveness of online remedial education.

3.2 Online Remedial Education Model

While remedial education has, according to Phipps (1998), been around since the seventeenth century, remedial education has become a common practice at colleges and universities around the United States since the 1960s. According to Bettinger and Long (2005, 19), the aim of remedial education is "to provide underprepared students with the skills necessary to succeed in college and gain employment in the labor market". Hart and Speece (1998) argue that open-door admission policies as well as an increased number of community colleges increased the number of underprepared postsecondary education students. As a consequence, colleges and universities started to offer remedial courses in order to meet the needs of these students (McCabe & Day, 1998; Phipps, 1998; Roueche & Roueche, 1999).

Recent figures indicate that large numbers of students follow remedial education in the US. More than 40% of first-year students at public 2-year colleges take remedial courses (U.S. Department of Education National Center for Education Statistics, 2003). For example, New York City provided summer help for 70,000 students in 1999 (Jacob & Lefgren, 2004). According to Attewell et al. (2006), mathematics was the most common remedial subject followed by reading and writing.

While remedial courses in the US are implemented across the board, they also remain controversial (Jacob & Lefgren, 2004; Kozeracki, 2002; Roueche & Roueche, 1999). Critics argue that remediation indicates some students are not academically strong enough to start at a university. In addition, critics argue that the government should not pay a second time for something the student should have learned at secondary education anyway. Proponents of remedial education provide rationales based on economic outcomes and societal benefits (Lavy & Schlosser, 2005; McCabe & Day, 1998) as well as issues of fairness. According to Kozeracki (2002), the term remedial education is inappropriate as it has a stigmatizing flavor. Therefore, Kozeracki (2002) considers the term developmental education more appropriate as it takes into consideration holistic approaches to student learning based on human development theory. Developmental education is "intended to bring together academic and student support services to assist students in preparing to make choices appropriate to their current stage in development" (Kozeracki, 2002, 85). Important to note is that developmental education is seen as appropriate for all students, rather than only for underperforming students. In this chapter, we use the term remedial education and development education interchangeably.

According to McCabe and Day (1998), the ideal comprehensive developmental program combines both individual growth and learning theories which

address cognitive as well as affective development. "[S]uccessful development programs offer a wide variety of comprehensive instructional support services, including assessment, placement, orientation, tutoring, advising, counseling, peer support, early alert programs, study skills training and support groups" (McCabe & Day, 1998, 21). Kozeracki (2002) conducted a review of success factors of remedial education and found that offering a high degree of structure, clear goals and objectives, social and emotional support, adequate staff training, and professional development are important elements for remedial education.

While the number of students participating in remedial courses is increasing, several researchers state that little is known about the causal effect of remediation on student outcomes. According to Bettinger and Long (2005), most studies on remedial education are descriptive and provide only simple comparisons between those who participated in remedial courses and those who did not. "The majority of community colleges do not know how effective their remediation is because they do not assess their effectiveness very well, do not know how to assess it, or do not want to know" (Roueche & Roueche, 1999, 27).

Recently, more empirical research has become available which measures the effectiveness of remedial education in a longitudinal manner while also taking into consideration demographical and socio-economic issues. For example, Jacob and Lefgren (2004) found a modest but positive net impact on student achievement scores for third-grade students participating in a summer school. In a study of 6800 high school students, Attewell et al. (2006) found that the effects of remedial education depend on the type of institution. In 2-year colleges, students who passed remedial courses were more likely to graduate than students with equivalent backgrounds who never took remediation. In 4-year institutions, remedial courses reduced students' chances of gradation, even when controlling for academic skills and background (Attewell et al., 2006). Bettinger and Long (2005) took a different dataset and found that mathematics remediation improved student outcomes, while English remediation did not improve student outcomes. In other words, recent research indicates that the effects of remedial education might depend on the particular context, type of institution as well as type of domain knowledge or skill.

While in the United States remedial education is a common phenomenon, in Europe remedial activities were until recently scattered among only a couple of institutes. However, with the Treaty of Bologna and the establishment of a European policy of open-access to higher education, several European institutes started to offer bridging courses in mathematics, language, and writing (Hoyles, Newman & Noss, 2001; Tempelaar et al., 2006; Wieland et al., 2007). A crucial difference with respect to the US situation is that the reasons for offering remedial education are different. While assessment criteria in secondary education across the US are harmonized, in Europe each country has the legal right to design and implement their own educational program and criteria (European Commission, 2004; Van der Wende, 2001, 2003). As a consequence, when a European student wants to study at a different European country, he/she will likely be confronted with different prior knowledge and skills requirements. For

example, it is common in The Netherlands to follow courses in statistics and economics, while in most European countries hardly any attention is given to these topics at secondary education. The fact that a foreign student is deficient in, for example, economics when starting a bachelor in the Netherlands has nothing to do with his/her cognitive, motivational, or financial capabilities. In contrast, most US participants of remedial education are underprepared for university due to a weak academic skills or preparation in high school and/or low socio-economic status (Attewell et al., 2006). "Many underprepared community college students come from economically deprived circumstances and have attended less than adequate schools" (McCabe & Day, 1998, 29). In other words, while the research findings at US universities provide some important insights, the context of remedial education in Europe is different.

As the number of foreign students enrolled into a European bachelor program increase, one reasonable response to facilitate foreign students in their transitional phase is to offer remedial education in a distance learning format. We define online remedial education as an instruction method using ICT which helps students to provide knowledge and skills necessary to succeed in university. In this way, foreign students can study at their home country, which reduces their costs while at the same time offering flexibility to develop their knowledge and skills. ICT has the power to support independent learning as well as to learn irrespective of time and geographical constraints with the widespread implementation of Internet (Bromme et al., 2005; Jonassen & Kwon, 2001). In addition, recent research findings indicate that ICT has some powerful tools for learning in collaborative settings where students work and learn together (Bryant et al., 2005; Schellens & Valcke, 2005). Although research in remedial education in physical settings provide important factors for success (Kozeracki, 2002; McCabe & Day, 1998; Roueche & Roueche, 1999), in online settings four additional issues need to be taken into consideration.

Firstly, the term online in this chapter refers to the Internet. To overcome barriers of time and place in a group of international students, the summer course should be available online 24/7. Only then participants are able to work anywhere they like and at times that suit them most (ubiquitous learning). The continuous availability also requires a different instruction method, which allows students to learn at their time of preference (Rienties et al., 2006).

Secondly, every student is unique in prior knowledge, learning style, and study progress (Tempelaar, Gijselaers, Schim van der Loeff & Nijhuis, 2007). Therefore, a Virtual Learning Environment (VLE) should ideally be adaptive to allow for individualized learning progression (Doignon & Falmagne, 1999). In contrast to physical remedial courses, ICT has the power to offer an adaptive learning path for each learner.

Thirdly, interaction is one of the most influencing elements not only in online learning, but also in all kinds of education as interaction stimulates motivation (Hmelo-Silver, 2004; Schellens & Valcke, 2005; Vrasidas & Zembylas, 2003). In completely virtual settings, where no face-to-face meetings take place, interaction becomes more difficult to facilitate (Bromme et al., 2005). Important

elements of interaction like context, body language, and intonation are difficult to transmit online (Jonassen & Kwon, 2001). Since interaction is an important mechanism to stimulate motivation of students, it is crucial for VLEs that interaction is actively stimulated by instructors (Bryant et al., 2005; Schellens & Valcke, 2005).

Fourthly, rapid feedback stimulates interaction in an online course. Various ICT assessment tools allow students to test their mastery of knowledge and receive immediate individualized feedback, which is known to be beneficial for learning (Marshall, 1999). Nothing is more demoting in an online course than a non-response to your own contribution(s) (Schellens & Valcke, 2005).

3.3 Methodology and Research Design

3.3.1 Setting

In order to test whether online remedial programs lead to improved study performance and study success, we designed two courses based on two distinctly different pedagogical frameworks which have proved to be appropriate in distance learning settings. The *online remedial course mathematics* was designed based on principles of cognitive learning theories. Cognitive learning theories provide important insights on internal processes of the learner on the learner's mind. The act of learning is regarded as an active process where new information is interpreted on the basis of prior knowledge. Learning is, therefore, seen as an active processing of information, which influences the learner's cognitive structures and as a result changes future learning processes. Thus, the learner is an active participant in his/her own learning process (Bryant et al., 2005). An instructor has to plan educational objectives, appropriate learning situations, and pedagogical means so that the students are led (and guided) to taking the necessary steps (operations) for successful internal learning processes (Wieland et al., 2007). The course architecture can be designed in such a way that the amount of new information is limited. In other words, new learning contents should be connected to knowledge already gained (Doignon & Falmagne, 1999; Heck & Van Gastel, 2006). In particular when differences in prior knowledge among students are large, offering adaptive individual learning paths through the use of ICT might be beneficial (Tempelaar et al., 2006). Therefore, the module "College Algebra" of a program called "ALEKS" (http://www.aleks.com/) was used. This program is based on Knowledge Space Theory, which assumes there are various paths to achieve certain knowledge on a certain level (Doignon & Falmagne, 1999). The program adapts the learning path depending on knowledge, progress, and learning style of the student. Although the students had to work individually, they could contact a teacher if the explanations of the program were insufficient or unclear to the student (Tempelaar et al., 2006). The pass–fail decision was made based on the end point (knowledge level) a student achieved.

The second course, *online remedial course economics*, is based on the principles of working and learning together. In contrast to more individual approaches to learning, socio-constructivist theories are based on the idea that learning takes place through social encounters. Meaning is constructed as a result of interaction between human beings, their environment, and the surrounding artifacts. Learning is regarded as an act of actively processing new information and continually (co-)constructing knowledge. Problem-based learning (PBL) is a typical application that fosters socio-constructivist learning. It focuses student learning on complex situations and on a variety of realistic information (Dochy, Segers, Van den Bossche & Gijbels, 2003). One of the key issues in PBL is that students are actively constructing knowledge in collaborative groups (Hmelo-Silver, 2004). Hence, the second course was an electronic form of PBL (Dochy et al., 2003; Rienties et al., 2006). Students participated in groups within a collaborative learning environment using discussion forums and announcement boards. Within 6 weeks, students had to collaborate together on solving six tasks through a PBL method. The group, together with the tutor, could decide upon the pace in which content and context were dealt with. No obligatory meetings were scheduled. The results of a summative test combined with graded participation in the group were used to make a pass–fail decision at the end.

3.3.2 Subjects

The present study took place in an International Business degree program for bachelor students at Maastricht University in the Netherlands. In order to assess who needed remedial education before the start of the curriculum, prospective students were able to make an online diagnostic test to assess their prior knowledge in the summer of 2005. In mathematics, 230 prospective students took the test and 83% scored below the threshold. In total, 211 prospective students took an economics test, of which 75% scored below the threshold (based on secondary education, A-level). Students who were willing to invest 60–80 h were invited to participate in one or both of the courses. In total, 50 students registered for economics and 55 for mathematics, of whom mostly German students with the basic level mathematics and no economics[1] participated. Participation was fully voluntary and free of charge, which could have led to a selection bias. As the courses were experimental in design and all students that were willing to join were granted access, only ex-post a potential selection bias can be investigated in a quasi-experimental setting.

[1] As most German students had to participate in a one-year military/community service program after graduating from secondary school or decided to take an internship, the actual mastery of mathematics and economics is probably lower compared to students who just recently graduated from secondary school.

In order to measure any longitudinal effects, the summer course participants were compared to other students that have similar characteristics (demographics, prior education, prior knowledge) for possible learning effects over a longer time-span. Therefore, we used a cohort of 850 first year bachelor economics at University Maastricht in the study-year 2005–2006 from which prior knowledge data of 709 (83%) students is available. In total, 629 students, of whom we have prior-knowledge data, did not take part in any of the summer course programs. As most students participating in the online remedial program were foreign and our primary focus is on transitional problems of foreign students, we removed the Dutch students from our inquiry. In addition, in order to measure long-term longitudinal effects, we selected the largest of three bachelor programs in business, namely International Business. In other words, in total 28 summer course mathematics students are left for comparison of study performance in Quantitative Methods I (QMI), 34 summer course economics participants for Economics and Business (ECBUS), and 45 summer students for the entire first year (Study success). In Table 3.1, the detailed descriptive figures of the used cohorts are listed.

3.3.3 Instruments

Two measures are used to determine any longitudinal effects of online remedial education. First of all, the short-term (study performance) effect of the remedial course is tested by comparing the pass rate as well as average grade of the relevant module with the particular domain knowledge that the remedial course aims to bridge. For the online remedial course mathematics, the relevant course to assess knowledge retention in the regular bachelor curriculum is QMI. QMI is an introduction into mathematics and statistics and repeats parts of secondary school math programs. For the online remedial course economics, the relevant course to assess knowledge retention in the regular curriculum is *Economics and Business* (Ecbus). This course prepares future managers to use

Table 3.1 Descriptive statistics of cohort based on prior knowledge

	Total	QMI	ECBUS	Study-success
Dutch	304			
German Basic Math (GK)	230	134		
German Advanced Math (LK)	91	50		
Other_Foreign Math	83	28		
EconPrior			18	
NoEconPrior			190	
Summercourse Pass	41	18	20	29
Summercourse Fail	38	10	14	16
No Summercourse	629	184	174	167

economic theory and extends the economics taught at Dutch secondary education.

Second, the long-term (study success) effect of remedial education is assessed by comparing the pass rate as well as GPA of the entire first year of the bachelor program. The metric that we used to estimate and describe the longitudinal effect is by taking the standardized difference of two means (Cohen's *d*) effect size. This metric is appropriate when means of two groups are compared. Cohen's *d* expresses the distance between two group means in terms of their pooled standard deviation (Cohen, 1998). Cohen (1988) recommend that $d = 0.20$ (small effect), $d = 0.50$ (moderate effect), and $d = 0.80$ (large effect) serve as general guidelines across disciplines.

3.4 Results

3.4.1 Study Performance in Quantitative Methods

In Fig. 3.1, we have distinguished the performance of the QMI exam based on the different prior education groups, namely German basic mathematics (GK), German advanced mathematics (LK), and other students (Other Foreign). There are large differences in pass rates of QMI based on differences in prior knowledge. The remedial course mathematics has been offered to the target group of German students with lowest level of math prior education (GK). In comparison to the QMI course performances of both successful summer course participants (SC-pass) and non-successful summer course participants (SC-fail) within their reference group, the GK group, it is striking that both types of summer course participants manage to achieve

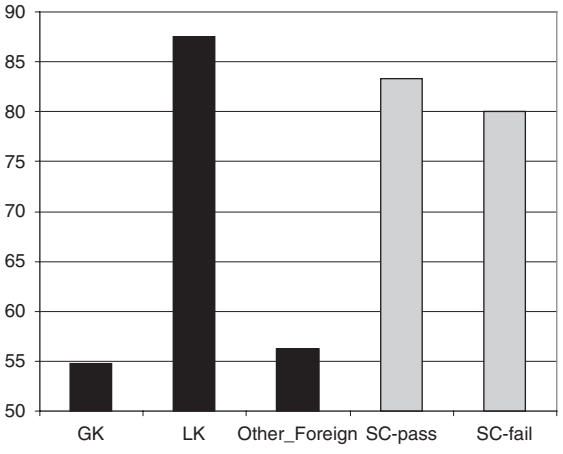

Fig. 3.1 Pass rates Quantitative Methods I (in %)

a major improvement in their performance. Roughly, although summer course participants have only basic math prior education, they show similar QMI course pass rates compared to students with advanced math prior education (LK).

Somewhat puzzling is the fact that students participating but failing the summer course seem to do relatively well in the QMI course compared to their peers. However, further analysis of course data provides an explanation of this phenomenon. Pass rates are only determined for students who showed up at the final exam; however, not all students who participated in the course ultimately show up at the exam. Taking non-attendance of the final exam into account, students participating but failing the summer course appear to be overrepresented in the group of students that participated in the course but did not show up at the exam.

Taking both attendance and performance in the exam into account, students passing the remedial course stand out with a success rate of 75%, compared to success rates of 50% or less for students not participating the summer course, or failing the summer course. An independent sample T-test indicates that SC-pass students are more successful than their peers, although the *p*-value is no longer statistically significant at 5% ($F = 60.253$, $t = 1.917$, p-value $= 0.057$, d-value $= 0.68$), probably due to a smaller population size. In fact, if we take the entire foreign population of all bachelor programs in business/economics, SC-pass students are more successful than their peers on 1%.

The finding that participants of the remedial course outperform non-participants is in itself no proof of the successfulness of the remedial course: again, there might be a selection bias. If the summer course attracts a non-representative group of students, such as highly motivated students, the effect of participation in the summer course might be explained due to motivation. To investigate the extent to which the increased success rate in the exam can be attributed to a selection bias component on the one hand, and a real learning effect by the summer course on the other hand, the partial math and statistics scores in the final QMI exam of Summer course participants and non-participants are compared.

Summer course participants indeed do better than non-participants (No-SC) in both math and statistics, but their advantage in math is much larger than their advantage in statistics, as can be seen in Fig. 3.2. In fact, the only statistically significant difference in partial exam scores is the math score of student passing the summer course compared to the math score of non-participants. So, if any selection bias is present, the effect it causes is small, statistically insignificant, and surpassed in size by a true learning effect.

A second check for the presence of a selection bias caused by motivational differences is provided by log data of students working in the ALEKS Business Statistics module during the course QMI. Whereas a small group of students used the ALEKS College Algebra module during the summer course on a voluntary basis, all students used the ALEKS Business Statistics module in the QMI course in order to practice and prepare for their statistics quizzes.

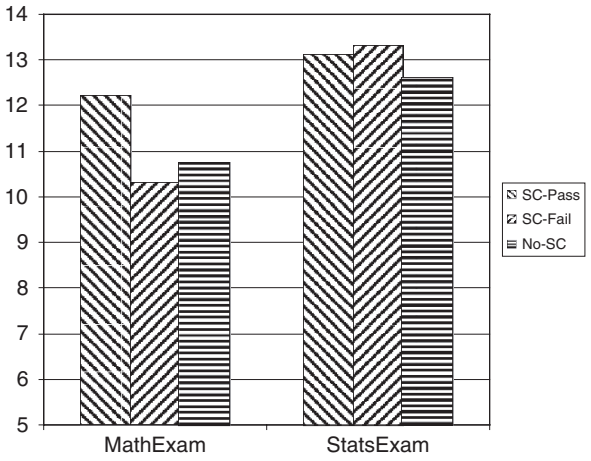

Fig. 3.2 Partial scores in QMI final exam (1–20)

Study time (logon time) in ALEKS Business Statistics can be used as a proxy for student motivation. As is clear from Fig. 3.3, summer course participants study slightly less than students in their reference group, the students with a GK prior education. In other words, it seems that the summer course participants are not more motivated than their peer group (GK). Neither partial scores nor study time suggests the existence of a selection effect. This suggest that the increased course performances of the successful mathematics summer course participants can indeed be attributed to a true learning effect.

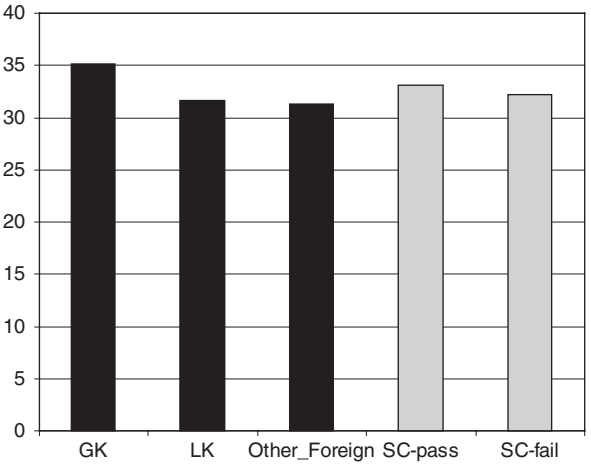

Fig. 3.3 Hours studied with ALEKS during QMI

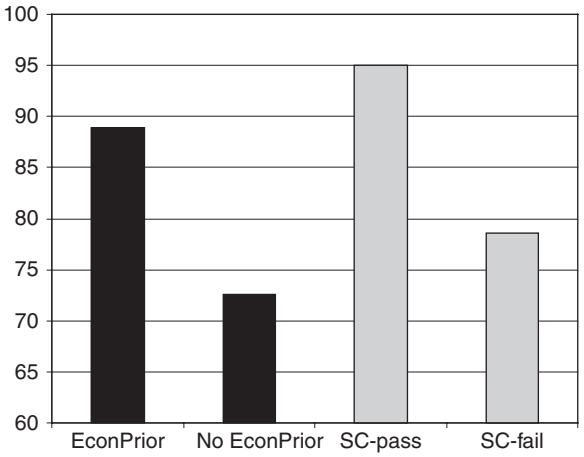

Fig. 3.4 Pass rates Economics and Business (%)

3.4.2 Study Performance in Economics and Business

In the second period, students follow an introductory economics course called *Economics and Business* (EcBus). Most foreign students had no economics in secondary education (NoEconPrior). A small group of foreign students indicated that they already had some prior education in economics (EconPrior). What is clear from Fig. 3.4 is that SC-pass students outperform their peers of the NoEconPrior group and even those who had Economics before. All except one SC-pass participant passed the final exam, whereas 72% of their peers (NoEconPrior) passed. An independent sample T-test confirms that SC-pass participants outperform NoEconPrior students ($F = 44.202$, $t = 2.191$, p-value $= 0.030$, d-value $= 0.65$) and the size-effect is moderate.

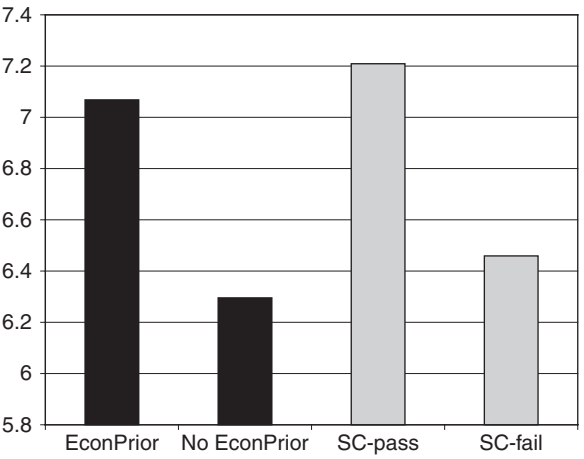

Fig. 3.5 Average grades final exam Economics and Business (0–10)

Besides improved pass rates, SC-pass participants outperform other foreign students with respect to the final grade on the EcBus exam in Fig. 3.5. In other words, students who passed the summer course on average score almost one point (on a scale from 1 to 10) more than students in the NoEconPrior-group. This difference is statistically significant and the effect size is moderate (F = 2.546, t = 2.606, p-value = 0.010, d-value = 0.71). SC-fail participants score between these two extremes, but an independent sample T-test confirms that SC-fail participants do not perform significantly better than NoEconPrior. In other words, we can conclude that participants who successfully completed the online remedial course economics perform better in the relevant course economics in the academic curriculum. Students who participated in the remedial course but failed to meet the end terms do not differ from students who did not participate in this remedial course.

3.4.3 Long-Term Study Success in First Year

In order to measure the long-term effects of the online remedial courses, the study success of all foreign International Business students in their first year is analyzed. The first year International Business consists of total nine courses. Students have two chances to pass an exam, the first sit and a re-sit. Therefore, we distinguish "Exams Passed 1st time" from "Exams Passed", which includes the re-sit. Finally, GPA measures the average grade on these nine exams. In Table 3.2,we compare three groups of students: students who did not take part in any summer course (No-SC), students who passed at least one summer course (SC-pass), and students who joined at least one summer course but failed to pass (SC-fail).

As expected, students who successfully participated in at least one of the summer courses passed on average 7.8 out of 9 exams at the end of year one. This is one exam more compared to students who did not join any summer course. When we include the re-sit possibility, the gap in study success between SC-pass and others remains. Finally, when comparing GPAs, it is clear that SC-pass participants outperform other students throughout the curriculum. All three long-term measures of study success are significantly different, which

Table 3.2 Longitudinal effects of online remedial education after 1 year

	No-SC		SC-pass		SC-fail		t-test difference	d-value
	M	SD	M	SD	M	SD		
Exams passed 1st time	6.46	2.72	7.76	2.08	6.88	3.28	2.44*	0.54
Exams passed (including resit)	7.31	2.45	8.38	1.35	7.25	3.21	2.30*	0.54
GPA	6.27	1.32	6.95	1.04	6.39	1.67	2.60**	0.57

Independent sample T-test (2-sided) and Cohen d-value of SC-pass vs. No-SC.
**Coefficient is significant at the 0.01 level (2-tailed)
*Coefficient is significant at the 0.05 level (2-tailed)

given the relatively small sample size of online summer course participants is remarkable. In addition, the size effect of Cohen *d*-value is moderate. The lack of perseverance of SC-fail students resemble the results obtained in the first year of the academic curriculum.

3.5 Conclusion and Discussion

In this chapter, we focused on longitudinal effects of offering online remedial courses. In contrast to offering a physical summer course, which requires attendance at a fixed time at a particular place, we explored the short- and long-term effects of offering an online remedial course in foreign students. In order to strengthen the analysis, two distinctively different pedagogical scenarios were used. The online remedial course mathematics used an individual learning philosophy based on cognitive learning theory, in particular Knowledge Space Theorem. Students worked on individually tailored (adaptive) exercises with a computer and limited (online) contact with a teacher. The reason was to maximize flexibility to study when and wherever students wanted. In contrast, the online remedial course economics was based on the idea that the ability to work together in groups in an online environment might be stimulating for the learning process. Therefore, this course used social collaboration with other students in an electronic problem-based learning format (e-PBL) in order to achieve higher levels of student motivation.

In order to assess whether the two remedial courses led to improved study performance and study success, a longitudinal study was conducted on the basis of a quasi-experimental design. The participants of the online remedial course mathematics outperformed their peers on the first mathematics exam (QMI) in the regular bachelor curriculum in both pass rate as well as average exam grade. The expected selection bias that might occur when students voluntarily join an experiment was neither supported by the analyses of the hours worked in ALEKS nor by the partial scores on the QMI exam. Therefore, it can be argued that students with a mathematics deficiency, who participated in the summer course, bridged the knowledge gap between them and their peers. In addition, the mastery of mathematical knowledge of successful summer course participants was raised to a level of students who were educated in advanced mathematics.

Despite an entirely different pedagogical framework, the economics summer course also contributed to the study success in the relevant bachelor course. The results in the course Economics and Business indicate that students following the online remedial course economics outperformed their peers with respect to pass rates as well as average exam grade. Thus, it can be concluded that the summer course economics has a positive short-term effect on study performance.

Finally, when looking at the long-term impact of the summer course program, students who passed at least one summer course also pass more exams in the first year than their peers. Even if we take into account the re-sit of these

exams, the size-effect remains strong. In addition, the GPA obtained in those nine exams is more than half a point higher than their peers. In other words, there seems some evidence that successful participation in this online remedial program improves the long-term study success of foreign students.

The implementation of both summer courses was mainly focused on pedagogical and organizational aspects, since the technical infrastructure was already in place. Both courses are implemented using existing ICT-infrastructures, comparable to other Higher Education Institutes. As long as sufficient expertise and resources are invested, the problems accompanying the increasing internationalization of students can be tackled.

Future research is intended to enlarge the subgroups of participants of the summer courses and to get more specified and detailed information about the characteristics of the subgroups. In this way, the statistical power of the research will be enlarged and we will be able to elaborate our analysis on possible selection-effects. In this way, we will be able to assess which pedagogical framework is more appropriate for online remedial education. In addition, more research is needed on motivation and learning-styles of students, which will help to identify a possibly preferred mode of learning. Finally, qualitative analysis will be necessary in order to assess whether online remedial education leads to increased academic integration.

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Chapter 4
Effectiveness of Blended Learning in a Distance Education Setting

Patricia Castelijn and Boudewijn Janssen

4.1 Introduction

Universities can use different media to teach students. One of the most widely used media is lecture-based teaching. Other types of media include tutorial groups and distance education. Different types of media may impact students' learning outcomes. The question whether differences in instructional media influence student achievement has been raised in the literature (e.g., Bryant & Hunton, 2000) and some conclusions have been drawn. Clark (1983, 445), for instance, states that "...media are mere vehicles that deliver instruction but do not influence student achievement...". However, such findings may be confounded by other factors, such as selection of students, type of examination and environmental variables (see, for example, Bryant & Hunton, 2000).

Previous research has investigated the relationships between teaching methods, environmental factors, student attributes and learning outcomes. However, this research has not investigated the relationship between teaching methods and different types of (desired) learning outcomes (see, for an overview, Watson, Apostolou, Hassell & Webber., 2003). A number of studies (Booth, Luckett & Mladenovic, 1999; Byrne, Flood & Willis., 2002; Duff, 2004; Jones & Davidson, 1995) examine the relationships between different types of learning approaches and exams, but not between learning approaches and different types of exam questions. Our study does distinguish between different types of exam questions, reflecting different cognitive dimensions. Also, previous research focuses on shorter time periods, thus limiting the explanatory power of such models. Our research uses a longitudinal design (Watson et al., 2003) to address these considerations.

The purpose of this paper is to investigate the effectiveness of a blended learning variant in a distance education setting with regard to student achievement as measured by exam scores on a financial accounting course. This financial accounting course is a master's level university course. This course is offered in a distance education setting. Students receive textbooks and

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workbooks and have the possibility to ask academic staff questions by e-mail. However, there are no formal or virtual classes. Starting a few years ago, this course has also been offered as part of a certified controller programme. Within this programme, the financial accounting course has been offered in a blended learning variant. In this blended learning variant, the students receive the same course materials as in the distance education setting, but in addition they participate in small-scale meetings. The goal of the additional meetings is to provide students with an enhanced learning environment to facilitate students during their learning process.

As the programme has been running for a number of years, the question arises whether the blended learning variant relates to higher exam scores. This research question will be examined while controlling for salient factors which may impede the relationship between the blended learning variant and exam scores. One of the factors possibly impeding this relationship are different cognitive dimensions[1] (Krathwohl, 2002) acquired during the financial accounting course. Student learning approaches may also influence this relationship. English, Luckett, & Mladenovic (2004) and Hall, Ramsey, & Raven (2004) show how encouraging a "deep learning" approach[2] can influence the student's level of skill acquisition by using specific methods and techniques like case studies and cooperative-based learning in accounting education. Although there is a teaching manual for the additional meetings, it cannot guarantee the uniformity of the educational methods and techniques used by the different lecturers for the course examined in this study. Thus we exclude student learning approaches from our research and the second research question of this paper is restricted to how different cognitive dimensions affect the relationship between the two teaching formats and exam scores while controlling for other factors potentially impeding this relationship.

This paper proceeds as follows. First, in Section 4.2 previous literature will be discussed. Next, the research setting will be described in section 4.3, after which the research data are provided in section 4.4. Section 4.5 will discuss the results of the data analyses. Section 4.6 will provide a conclusion.

4.2 Literature Review

One of the few recent articles providing an accounting education literature review is by Watson et al. (2003). Watson et al. (2003) categorize previous accounting education research among five lines: assessment, curriculum and

[1] Krathwohl (2002) distinguishes between different levels of cognitive dimensions, based on the taxonomy of educational objectives by Bloom et al. (1956). This study is partially based on this taxonomy, which consists of six major categories: knowledge, comprehension, application, analysis, synthesis and evaluation.

[2] The "deep approach" to learning (Davidson, 2002) entails looking for meaning in the matter being studied and relating it to other experiences and ideas with a critical approach.

instruction, educational technology, faculty issues and students. Two of these categories are especially relevant for this paper: assessment and curriculum and instruction. When investigating assessment, specifically outcomes assessment, according to Watson et al. (2003, 270) there is an ambiguous relationship between student characteristics (such as age and prior academic achievement) and academic performance. However, Watson et al. (2003) do not specifically investigate distance education settings with regard to assessment. Also with regard to curriculum and instruction, Watson et al. (2003) provide only limited information on distance education elements. However, they do put forward the question how distance education settings can be effectively used in teaching (Watson et al., 2003, 289). Although they specifically mention web-based distance education technologies, the effectiveness of other distance education formats are also relevant. The current chapter addresses both issues by investigating the (a) effectiveness of two specific distance education setting, including a blended learning variant over and (b) a longer period of time.

Previous research shows a lack of information with regard to the question whether the effectiveness of modes of instruction is related to disciplines or subjects. Within the setting of this paper, an advanced financial accounting course is the subject of study. Accounting courses have some particular attributes as set forth in Bollen, Janssen, & Gijselaers (2002). Specifically, such courses are more abstract, model-oriented compared to other academic courses (Bollen et al., 2002, 22–23). This more model-oriented content of such courses are reflected in the different cognitive dimensions. In general, students experience three cognitive dimensions (Anderson, 1995): the cognitive stage during which students develop a declarative encoding, the associative stage during which successful procedures to perform skills are acquired and the autonomous stage during which procedures become more automated and rapid. These different dimensions also come back in Bloom, Engelhart, Furst, Hill, & Krathwohl (1956) taxonomy of educational objectives and Krathwohl's (2002) revised version of this taxonomy which we use in our research design.

In particular, in terms of Anderson's (1995) taxonomy (financial) accounting courses place more emphasis on the acquisition of meta-knowledge and procedural knowledge compared to declarative knowledge for less abstract courses (Bollen et al., 2002, 22–23). Of particular concern in accounting courses is whether students are able to *transfer* knowledge from other domain areas (like mathematics) to the accounting domain area, but also whether this transfer of knowledge depends on the type of knowledge transferred (Kuhn, 2000). Anderson (1995) indicates that such positive transfer is only possible when the two domains involve the same knowledge. However, the results of Bollen et al. (2002) indicate that teaching methods may have an impact on transfer of knowledge to other domain areas. Although Bollen et al. (2002) did not investigate a distance education setting, they did investigate a traditional education setting incorporating different teaching formats. Other research (e.g., Booth et al., 1999; Byrne et al., 2002) indicates that learning approaches

may also affect learning outcomes. As we are unable to directly witness learning approaches, this element is not considered in our study.

Several authors (Philips, 1998; Koh & Koh, 1999; Davidson, 2002; Lane & Porch, 2002) investigate how outcome performance of accounting students can be related to student characteristics. Some findings are inconclusive like those of Lane and Porch (2002) who suggest a more qualitative approach to assess factors influencing student performance. Koh and Koh (1999) study the impact of six variables (gender, prior accounting knowledge, academic aptitude, mathematics background, previous working experience and age) on performance of students in a 3-year accountancy programme. Koh and Koh (1999) state that, intuitively, students with prior knowledge should perform better than those without that knowledge, but that studies in various institutions and countries have not conclusively supported that presumption. However, their findings do not provide evidence to support this intuition. Students with prior knowledge initially show better performance, but seem to lose this advantage when performance is tracked over time. They conclude that academic aptitude is the most important determinant of performance in the accounting programme. Prins, Veenman, & Elshout (2006) examine the relationships between intellectual ability, metacognitive skills and learning. They find that metacognitive skills[3] rather than intellectual ability appear essential for learners operating at the boundary of their knowledge. For this reason, we also examine prior education levels in this study.

Specifically when looking at student performance on exam questions, higher levels of "formal reasoning" are associated with superior student performance on difficult, but not easy, accounting exam questions (Jones & Davidson, 1995; Philips, 1998). This indicates that depending on the type of exam questions, different teaching methods are required. Especially when higher reasoning skills are required from students, teaching methods and materials should encourage such higher reasoning skills (Jones & Davidson, 1995). Whether a distance education setting, a classroom setting, or a blended learning setting is most appropriate, may depend on the skills required from students.

Students' learning is also influenced by the learning context, which includes both the nature of the course and the teaching within the course (English et al., 2004). Both elements are described in the research setting.

Bonner (1999) states that "the choice of teaching methods should be based primarily on the type of learning objective" (p. 11). An implication is that "learning objectives involving complex skills require teaching methods that promote active learning on the part of students, while learning objectives involving simpler skills can be achieved with more passive teaching methods" (Bonner, 1999, 11). So, the teaching method(s) should be based on the learning objective(s) of the course.

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[3] The term metacognitive skills has been described by Flavell (1979: 907) as the "knowledge or beliefs about what factors or variables act and interact in what ways to affect the course and outcome of cognitive enterprises".

To achieve certain learning objective(s) in some cases, teaching methods should be adjusted. Dowling, Godfrey, & Gyles (2003) investigate to what extent a hybrid teaching method improves academic performance compared to a traditional educational setting. They find that performance as measured by the final mark of the course under the hybrid teaching method (incorporating both traditional classroom lectures and electronic delivery and communication methods) is indeed higher than when using a traditional teaching method. Comparing different learning curricula using previous research, Colliver (2000) finds no convincing evidence that problem-based learning improves students' knowledge base compared to a traditional curriculum. However, as we are not investigating a problem-based learning curriculum, these results may not be applicable to this study.

Within a distance education setting, Cheung and Kan (2002) investigate, among others, the relevance of classroom education in addition to self-instructional materials. They find that attending tutorials has a positive impact on student performance as measured by the course result, while controlling for gender, relevant academic background, previous academic achievement and relevant learning experience.

Although Dowling et al. (2003) and Cheung and Kan (2002) attest to the positive impact of blended learning on course results, they do not distinguish between different cognitive dimensions; so it is unclear to what extent blended learning contributes to which cognitive dimensions.

Based on this previous research, our research design investigates two educational settings and their association with different cognitive dimensions, while controlling for a number of student attributes. As we are unable to directly witness teaching activities in the blended learning variant, we do not incorporate learning approaches in our research design.

4.3 Research Setting

The comparison of the distance learning variant and the blended learning variant is based on the data of an advanced financial accounting course. The course is aimed at students already having a good knowledge of accounting who wish to extend their knowledge base into the area of Dutch financial accounting and the requirements of the International Accounting Standards Board. The main subjects in the course are financial accounting theories and conceptual frameworks, accounting research, financial analysis and characteristics of Dutch Generally Accepted Accounting Principles and International Financial Reporting Standards. Alongside these topics, a selection of elements from financial statements, such as provisions, intangible assets, financial instruments, consolidation, leasing and corporation taxes are investigated in detail.

The ultimate objective of the course is that students acquire a broad and detailed knowledge of financial accounting in order to be able to analyse financial reports, but also to be able to draw up (parts of) financial statements.

In the distance learning variant, the Financial Accounting course is offered by the Open University of the Netherlands (OUNL). The OUNL is the university dedicated to distance learning for students in the Netherlands and the Dutch-speaking part of Belgium. On average, about 24,000 students a year are registered at the OUNL.

In the distance learning variant, the course is compulsory in the MSc in business economics and business administration of OUNL. The course material consists of a standard financial accounting textbook and of additional material developed by the OUNL (a workbook, a website and a web-based discussion group for students). The course is developed for self-study, but if necessary students can direct questions per e-mail to the academic staff. The workbook is designed to guide students through the textbook material and has additional review assignments.

The course is assessed by means of a written examination, compiled and graded by the same OUNL-tutors for both variants. An average exam is made up of some 40 open-ended questions representing different subject areas. The subject areas selected vary from exam to exam. The exams are held at 18 OUNL study centres in The Netherlands and Belgium three times a year. On average, about 90–100 students take the course.

In the blended learning variant[4] the course is part of the "Financial Controller" programme,[5] which is an advanced specialist professional master level programme. The programme is designed for financial managers and is a combination of master-level courses in the fields of financial and management accounting, management information systems and financial management. The programme is offered by a number of Dutch colleges ("Hogescholen") in collaboration with the OUNL.

In this blended learning variant of the financial accounting course, the OUNL-material (textbook, workbook, website, web-based discussion group for students and academic staff support per e-mail) is also used for the course, but in this variant additional small-scale group meetings are provided. These meetings are organized by lecturers from the colleges and financial accounting specialists. The college lecturers receive a manual from the OUNL describing how they should apply the course materials in their meetings with students. The manual stresses the need to show students how they should analyse financial accounting issues, and not merely reproduce knowledge. As we do not directly witness teaching methods, we are unable to ascertain the extent of usage of this manual. Although certain skills, like interpersonal skills may be more effectively achieved in a classroom setting, such skills make up a minor part of this particular financial accounting course.

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[4] Students are not randomly assigned over the distance learning and blended learning variant. This may possibly induce a self-selection bias in our data, for which we try to control by checking a.o. prior education levels.

[5] Enrolling in the Financial Controller programme is considerably more expensive for students than enrolling in the MSc programme of the OUNL. On the other hand, students of the Financial Controller programme are often reimbursed by their employers for the tuition fees.

Of the approximate time needed to complete the course in this setting, 25% is taken up by the additional meetings and 75% by self study. Group size maximum for the meetings is 20 participants, but on average 10–15 student attend the meetings. The OUNL-professors prepare and grade the examination material, which is identical in level and comparable in content to the material used in the distance learning setting exams. The exams are organized twice yearly by the colleges.

Student numbers per year for the Financial Accounting course have been larger in the blended learning setting than in the distance learning setting. In the last few years, however, student numbers in the Financial Controllers programme have declined, probably as a result of economic conditions. For instance, 200 students enrolled in this programme during 2002, while in 2005 this number had decreased to 97 students. The student numbers in the distance learning variant have also declined.

The main differences between the distance learning variant and the blended learning variant are the additional small-scale group meetings offered at the colleges and in the total number of students enrolled in each variant during the research period. The dropout rates are similar for distance learning and blended learning students.

The majority of students who take the course in both variants have a college degree in the field of business studies. However, in the distance learning variant, about one tenth of the students already have a partial or completed university degree in another field than business economics or business administration. For the blended learning variant, the number of students with this form of prior education is negligible.

Keeping in mind the differences between the two variants, we expect higher scores on the different cognitive dimensions for the blended learning students as a result of the small-scale group meetings.

4.4 Data Selection

To collect sufficient data points for subsequent analyses, test scores for several years are collected. The most recent years available are the years 2000–2005. During those years, there were no substantial changes to the Financial Accounting course and exams. As stated in Section 4.3, for the distance learning variant three exams are organized each year and for the blended learning variant two exams are organized each year. In total, this should result in 30 exams over the 6-year period 2000–2005. However, due to additional exams scheduled, the total number of exams is 32, of which 19 are distance learning variant exams and 13 are blended learning variant exams. These two types of exams are not always identical, but show a great deal of similarity, as the questions are derived from one question database. Each exam has the same layout and content.

Using this set of 32 exams, detailed information was gathered using two different electronic information systems which contain exam data. The blended learning variant information system provides information about test scores for all sub-questions for all individual students. The distance learning information system provides this information only at the aggregate level, which is per exam, not per individual student. For all exams, all sub-questions were indexed by the authors of this study according to their cognitive dimension, based on Bloom's (Bloom et al., 1956) taxonomy and a revised version of this taxonomy (Krathwohl, 2002).[6] Three types of questions were discerned[7]: knowledge questions, where students are asked to replicate knowledge from the course material; application questions, where students have to apply knowledge and procedures in a certain context; and insight questions where students are asked to apply knowledge and procedures to other domain areas.

Below, Table 4.1 provides some descriptive and T-test statistics regarding the students and type of exam questions included in this study.

The data in Table 4.1 indicate that there are more blended learning variant students than distance learning variant students; however, both groups are sufficiently large for data analyses. For both types of variants, the proportion of different types of questions significantly differed. However, the absolute differences between the two groups of students in type of exam questions are small. About one in five students is female for both groups of students. So, regarding sex and type of exam questions both groups are comparable. Note that differences in prior education levels may also affect exam scores. Therefore,

Table 4.1 Descriptive statistics regarding exams and students

Type of question	Variant		T-test	
	Distance learning	Blended learning	T-value	Significance
Knowledge	41.8%	45.7%	−7.9	0.000**
Application	52.9%	50.9%	4.4	0.000**
Insight	5.16%	3.42%	8.6	0.000**
Sex of student				
Female	19%	19%		
Male	81%	81%		
Number of exams	560	1,513		

** *t*-values are significant at the 0.01 level (2-sided)

[6] The authors first indexed the exam questions individually. For about 90% of the exam questions, indexation resulted in the same cognitive dimensions. The remaining 10% of questions were indexed by mutual agreement between the authors.

[7] The categorisation of questions in three different types can be compared to Bloom's (1956) taxonomy in the following manner: knowledge questions constitute level 1.0 and 2.0 of Bloom's taxonomy, application questions constitute level 3.0 and insight questions constitute level 4.0.

Table 4.2 Prior education levels of students

Education type	Distance learning variant	Blended learning variant
No information available	116 (20.7%)	42 (2.8%)
High school	41 (7.3%)	1 (0.1%)
Middle-level vocational training	18 (3.2%)	18 (1.2%)
Colleges[9]	317 (56.6%)	1116 (74.3%)
Specialist vocational training[10]	0	299 (19.9%)
University	68 (12.1%)	37 (2.5%)
Total	560	1,513

the prior education level of students was categorized. Below, Table 4.2 provides information on prior education levels,[8]

Although both student populations are not completely comparable, a majority of students of both groups has a prior college level education. For both groups, this is typically a so-called HEAO, which is a business administration college. Taking into account the same content of the financial accounting course, the largely similar proportions of types of exam questions and to a large extent comparable prior education levels of students the exam scores of both student populations should be comparable, not taking into account the differences in education format.

4.5 Data Analyses

As the research question of this paper is to examine what the influence is of additional blended learning teaching on exam scores, Table 4.3 below provides information on the overall test scores, but also the test scores for knowledge, application and insight questions separately for both student populations. To ensure that both student populations are as comparable as possible, all observations with a "0" were deleted from the dataset.[11]

The figures in Table 4.3 indicate that overall test scores for both student populations are almost similar at about 54%.[12] However, both knowledge and

[8] The categorisation of prior education levels is based on the OUNL's student database.

[9] Dutch higher tertiary education can be divided in two groups: colleges and universities. Colleges mainly have educational activities, while universities also have research activities. The educational level of colleges is somewhat below that of universities.

[10] This includes specialist studies like assistant controller and certified accountants, but not at university level.

[11] Such scores typically represent student who have registered, but not taken part in the exam. The blended learning students exhibit more "0" scores due to different exam registration procedures at the colleges.

[12] In order to pass the exam, students have to attain a minimum score of 55%. The average overall scores indicate that almost half of the students pass the exam.

Table 4.3 Overall test scores and separate scores by type of question

Type of exam question	Distance learning students		Blended learning students		T-test	
	Mean	Std. dev.	Mean	Std. dev.	T-value	Significance
Knowledge	56.7%	8.2%	54.8%	16.1%	3.4	0.001**
Application	50.7%	8.3%	53.9%	18.9%	–5.4	0.000**
Insight	49.1%	29.5%	39.5%	41.7%	5.8	0.000**
Overall (weighted average)	54.2%	7.8%	54.4%	14.6%	–0.4	0.726

** *t*-values are significant at the 0.01 level (2-sided)

insight question scores are higher for distance learning students. The opposite is true for application question scores which are higher for the blended learning students. For all types of exam questions, standard deviations are markedly higher for the blended learning students, indicating larger differences between these students.[13]

To examine the effects of the different variables in a multivariate setting, the following OLS regression model is specified:

$$SCORE_i = \alpha_i + \beta_1 AGE_i + \beta_2 SEX_i + \beta_3 BLENDED_i + \varepsilon_i$$

where:

SCORE = either the overall exam score or the specific exam score on one of the three types of questions;
AGE = age of the students at the time of participating in the exam;
SEX = a dummy variable indicating the gender of the student (1 = male; 0 = female);
BLENDED = a dummy variable indicating 1 for the blended learning variant and 0 for the distance learning variant;
Subscript i = observation i and ε is the error term.

Below, Table 4.4 provides information on the OLS regression specifications for the different models.[14]

The regression coefficients do not discern a relation between the blended learning variable and the overall exam score. However, they do show lower scores on knowledge and insight questions and higher scores on application

[13] These differences in scores on different types of questions may also be affected by a self-selection bias, as indicated by Colliver (2000). To control for this, our empirical design uses control variables. Supplemental analyses (not reported) do not show large differences between individual colleges exam scores.

[14] As our data sample includes re-sit students, we include a dummy variable to examine whether re-sit students have different scores compared to first-time students. The results (not reported) indicate that re-sit students have lower overall exam scores, but do not affect the interaction between the blended learning variable and different cognitive dimensions.

Table 4.4 OLS regression statistics

Overall exam score				
Variable	Age	Sex	Blended	Overall model
Beta/F-value	0.001	−0.017	0.002	1.638
Significance	0.982	0.028*	0.789	0.178
R-square (adj)	0.001			($N = 1{,}884$)
Knowledge questions score				
Variable	Age	Sex	Blended	Overall model
Beta/*F*-value	0.000	−0.018	−0.018	3.689
Significance	0.690	0.030*	0.016*	0.012*
R-square (adj)	0.004			($N = 1{,}884$)
Application questions score				
Variable	Age	Sex	Blended	Overall model
Beta/*F*-value	0.000	−0.014	0.032	5.593
Significance	0.440	0.140	0.000**	0.001**
R-square (adj)	0.007			($N = 1{,}884$)
Insight questions score				
Variable	Age	Sex	Blended	Overall model
Beta/*F*-value	0.000	0.040	−0.096	8.692
Significance	0.817	0.081	0.000**	0.000**
R-square (adj)	0.012			($N = 1{,}884$)

* *t*-values are significant at the 0.05 level (2-sided)
** *t*-values are significant at the 0.01 level (2-sided)

questions for the blended learning variant. The regression coefficients also indicate that male students have lower overall exam scores, associated with a lower score on knowledge questions. Students not only differ in sex, but also with regard to prior education levels.[15] Appendix A not only provides information on the mean scores for the overall exam score, but also for the three different types of question per category of prior education level. Although students with a specialist prior education level attain higher overall exam scores, in general the differences between different categories of prior education level are small, especially when taking into account the small number of observations for the high school and middle-level vocational training categories. This supports the conclusion that differences in prior education level have only a small effect on the comparability of the distance learning and blended learning student populations.

The multivariate OLS regression statistics[16] confirm the univariate statistics, i.e. distance learning students and blended learning students have similar

[15] A number of students have studied previously at another university. Typically, this prior study is in a completely different area, like engineering. Despite this possible advantage, they do not outperform students with other educational backgrounds.

[16] Analyses using an ANOVA design (not reported) provide similar results.

overall exam scores. However, they do have different scores on the three types of questions used in this study: knowledge, application and insight questions.

To investigate whether our results are not driven by the peculiarities of a financial accounting course, we also examined two other courses which are both taught in a distance education and a blended learning variant. These are a financial management course and a planning and control course. Because of data limitations, only the overall blended learning effect was examined for these courses. Statistical results (not reported) indicate that for the financial management course, blended learning students have higher exam scores with the exams for the largest part consisting of application questions. For the planning and control course, blended learning students have lower exam scores with the exams mainly consisting of insight questions. These results confirm our findings for the financial accounting course.

Overall, the results indicate that the addition of small-scale group meetings in the educational setting in this study are not associated with higher overall exam scores. In particular, as a result of the additional meetings students seem to able to achieve higher scores on application questions, but at the expense of lower scores on knowledge and insight questions. On the other hand, the low R^2-scores raise some doubt about the effectiveness of providing a blended learning setting. One possible explanation for the absence of a (positive) blended learning effect may be a different understanding of "learning" and "knowledge" between the OUNL examiners and college teachers, as most college teachers in this research design have a non-academic background (Reeve & Gallacher, 2005). Another possible explanation might be the presence of a self-selection bias, questioning the comparability of the two student populations.

4.6 Conclusion

Earlier research has not clearly indicated whether a blended-learning variant of distance education setting is effective with regard to exam scores. This study uses a research design where a financial accounting course is offered both to students in a distance education variant and students in a blended learning variant. Students in the blended learning variant receive additional small-scale group meetings that the distance education students do not receive. Both student populations, in general, have prior higher tertiary education levels. Both univariate and multivariate data statistics indicate that both student populations have similar overall exam scores. However, blended learning students score higher on application questions, while scoring lower on insight questions. This may reflect a tendency of lecturers to focus on application type questions at the cost of knowledge and insight type questions. However, it may also reflect a difference in motivation and student's approach to learning between the student populations. It is possible that the blended

learning student uses more of a "strategic approach" (Duff, 2004) to learning and tries to pick up cues regarding the assessment schemes from their lecturers. The distance learning student may have the deep approach to learning (Davidson, 2002) which entails looking for meaning in the matter being studied and relating it to other experiences and ideas with a critical approach. The present study has several limitations. A main assumption in this study is that both student populations are comparable with regard to prior education levels. To the extent that this assumption is violated, this may render the conclusions of this study invalid. However, to the extent that this assumption is not violated, our results indicate that the effectiveness of a blended learning component is limited. Although a self-selection bias regarding prior education is not evident, self-selection bias may be related to students' learning approaches and/or motivational aspects that may differ between the two variants.

For this particular financial accounting course, our results indicate that the educational format (in particular, inclusion or exclusion of classroom education) should follow the educational goals. Additional classroom education needs to add value to the quality of the course design to be effective. In general, we concur with the findings of Bernard et al. (2004) that "... characteristics of instructional design, such as the instructional strategies used, the feedback provided, and the degree of learners engagement ..... create the conditions within which purposive learning will occur" (p. 411).

Future research might be carried out where a randomized student selection mechanism is used, ensuring that no self-selection bias is present in the data. The inclusion of learning approaches and motivational aspects in the research design would be useful.

Appendix A Mean Exam Scores for Different Types of Prior Education

Prior education level	Number of observations	Mean exam score	Mean score knowledge questions	Mean score on application questions	Mean score on insight question
Not available	158	55.7%	57.9%	52.9%	50.6%
High School	41	55.5%	59.3%	49.9%^	36.7%
Middle-level vocational training	36	51.8%	52.6%	49.9%	51.8%
Colleges	1,422	53.7%*	54.8%*	52.4%*	41.4%
Specialist vocational training	299	56.6%*	55.2%	57.7%*^#	38.1%
University	105	55.2%	58.2%*	51.4%#	49.0%

*, ^, #: indicate significant differences between percentages in the same column with the same symbol

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Chapter 5
Virtual Teamwork: A Product of Globalization

Implications for University Education

Rainer Lenz and Carlos Machado

5.1 Virtual Teams: A Product of Globalization

The globalization of the world economy has not only led to an increasing split between the spatial and the functional aspects of the value chain; it has also changed the organization and the working environment within companies. Originally, almost every company designed its value chain process locally (input, production, and output). Presently, spatial and functional processes are separated and the organization itself is highly specialized. The complexity of global processes requires intensive collaboration with colleagues, co-workers, or external consultants from different places in the world, different educational and knowledge back-grounds, different levels of hierarchy, and, most likely, from different organizations and companies.[1] This form of collaboration must, because of geographical distances and cost factors, work mostly via media-based communication and will be supplemented only occasionally by face-to-face meetings between team members. Working in virtual teams will consequently become the predominant type of work organization within multinational companies.

[1] For a clear description of the growing complexity of systems (companies) cf the system theory developed by Niklas Luhmann. Accordingly, the system is defined as a set of elements and relations which are dependent upon each other. A company is insofar an Open System, as it exists in mutual relation (input and output relation) to its environment. The generic term globalization describes a development which implies a growing number of system elements with a theoretical geometric progression and an increasing number of relations. If one does not simply count the elements, but rather considers the qualitative diversity of these and the time dimension according to the variety of elements and relations, then the complexity of the economic systems (companies) becomes apparent (Luhmann, 1997).

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5.1.1 Definition of 'Virtual Team'

The term *Virtual Team* requires specification. The concept of the virtual team is related to conventional teamwork. Both types of organizations have in common "the group" as a social core unit. To be sociologically defined as a group, the following elements must be fulfilled (Schäfers, 1999):

- a certain number of members (3–25 persons),
- a common goal,
- a process of continued communication and interaction over a long period of time,
- an *us* attitude and a feeling of group togetherness,
- a set of common norms and values as the basis of communication and interaction processes,
- a network comprising a variety of roles performed; the network allows for both goal achievement and conflict resolution.

A specificity of a virtual team is that face-to-face meetings of group members for information exchange do not often take place; they occur only sporadically. Due to spatial and temporal separation, the continuous process of communication and interaction within the group takes place predominantly through the use of modern communication technologies. If one uses the sociological definition of group as a basis, then the virtual team is specified as follows: A virtual team comprises a certain number of members who solve complex tasks through predominantly media-based communication and interaction processes and, consequently, a continuous form of collaboration must be developed.

5.1.2 The handicap of being a "Virtual Team"

The increase in the international division of labor left companies with no choice between virtual and conventional team work: outsourcing of business processes requests intensive collaboration between staff based in a multitude of business locations. But empirical research indicates that nearly half of outsourced business relations fail to be successful due to a lack in virtual team work. Virtual team conflicts happen frequently and are more serious in nature compared to the problems in traditional teamwork (Hinds & Bailey, 2003; Redman & Sankar, 2003; Weinkauf & Woywode, 2004). An analysis of reasons for this provides four main problem areas:

- The majority of authors emphasize that digital communication does not broadcast informal signals such as gestures and facial expressions, and it could therefore be more difficult to develop trust and togetherness within a group. Teams which, at least during take-off phase, have the opportunity to meet face-to-face and to build personal relations with others are more successful than those which cooperate exclusively on a virtual level.

- It is often reported that staff use the virtuality in communication lines to take the free-ride position within the working group. The lack of social integration and control in a static work environment bears the risk of opportunistic behavior by team members.
- The team structure in virtual collaboration usually allows for a higher degree of heterogeneity compared with conventional teams. Besides the multidisciplinary knowledge profiles of the team members, there are also differences in the team members' cultural origins and influences. Language differences and their implications for teamwork are considered to be a part of cultural variation. The dissimilitude can be traced to corporate cultural affiliation and differences in team members' hierarchical positions. Depending upon the social competence of team members, diversity could function as a pool for new ideas and innovations or, adversely, it could lead to irreconcilable team conflicts. Most surveys show that the latter tends to be more likely.
- In general, Virtual Teams imply the advantage of hiring a group of experts regardless of location. In this sense, virtual team work could facilitate a more efficient use of internal and external expert knowledge. But the reality on the ground shows that teams often lack the necessary skills and methods in knowledge management to explore the full range of opportunities.

5.2 Requirements the Virtual Team Members Must Meet

The above description of problems reveals some particularities in the working profile of virtual team workers in comparison to conventional team workers. These specific requirements can be divided into three areas of competences (see Fig. 5.1):

- social competence, which shapes the relationship between the individual and the group;
- media competence, which consists in the ability to choose the appropriate communication channel for the right purpose;
- methodological competence in the field of knowledge management.

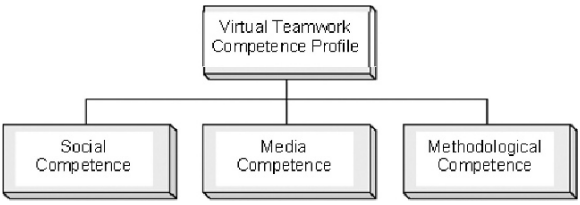

Fig. 5.1 Virtual teamwork competence profile

5.2.1 Social Competence

The concept of *Social Competence* contains the total of the skills and attitudes an individual team member shows towards others. Social Competence contributes heavily to the success of virtual teamwork. As a starting point for the analysis of social competences needed for virtual team work, the focus is on the individual itself before it shifts toward interaction within the team.

Individual Responsibility

In a virtual space, there exists no institutionally anchored or fixed work organization, so that the virtual team member is required to create his or her own configuration of the work environment. There is a lack of social control usually based on interaction with colleagues and obligatory physical presence in the work environment. Skills in self-organization and clear project structuring connected with high-intrinsic motivation, discipline, and achievement orientation are required for the virtual team members. Basically, staff immersed in virtual forms of organization possess a higher individual freedom, but also have more responsibility.

Teamwork in a Virtual Context

Conventional teamwork is known to require a development of trust which is essential for the quality of the teamwork as there is a permanent risk of opportunistic behavior on the part of any team member. The problem of so-called *free-riding* could surface in virtual teams as, on one hand, the lack of social integration of workers is an incentive for *free-riding*. On the other hand, the fundamental elements of informal information such as voice pitch, eye contact, gestures, facial expressions, and body language are lost in the digital transmission of information. This deficit in informal communication makes it difficult to develop trust and group identity. There is a lack of personal sphere among the team members. Therefore, teamwork in the virtual context requires a much higher degree of objectivity to the extent of renouncing personal disposition towards team colleagues and establishing primarily cognitive control mechanisms in working style and cooperative behavior.

In this context, Orlikowski, Hertel and Konradt (2004) suggest the importance of formulating and agreeing on common team goals. The division of time into a sufficient number of partial goals with clearly assigned responsibilities is important to achieve the overall goal. It is necessary for the required transparency to have a clear method of assessing goal achievement in order to make the contribution of each member measurable and identifiable. This collective formulation and set of goals is a type of social contract concerning commitments and rights of the team members which increases the level of engagement and participation within the group work. Overall, teamwork in a virtual context possesses a different quality than work in a conventional team because virtual

group work is based on the constitution of a formal intra-group agreement of goals and rules, and not on the level of mutual trust.

Intercultural Collaboration

Culture and communication are closely connected in a factual context. As an example, the most apparent element of culture is the medium of language. There are several invisible elements, which are responsible for creating, sending, and processing information (Hall & Hall, 1987). Therefore, the intellectual collaboration in virtual teams begins with the agreement on a common language medium. At the same time, there should not be any major discrepancies in the members' foreign language proficiency as the use of synchronous technological communication could be impaired.

The analysis of invisible cultural elements and their implications for virtual collaboration is difficult as culture is closely linked to the individual and its social background and not exclusively to its regional and national borders. However, in an attempt to generalize, Hofstede's cultural dimension of power distance might be of relevance for virtual teamwork (Hofstede, 1983). The dimension of power distance examines the social tolerance of inequalities in a hierarchy, in power, and in wealth. According to Hofstede, the vast majority of African, Latin American, and Asian countries, and some south European countries, demonstrate a high power distance, meaning that the hierarchies within organizations and companies are very steep and distinct. Therefore, the collaboration of employees from this cultural background in a virtual team could signify a serious challenge. In the virtual world, no type of hierarchy exists that is based on formal authority. Likewise, in a virtual context, all external and visible signs of hierarchy difference, such as academic title, formal address, clothing, and office equipment lose their meaning. The power structure within a virtual team is informal in nature and based on information, knowledge, and experience of each member. A virtual team must develop its own decision-making processes and decision-making authorities as they are not predefined by a given hierarchy. With regard to creativity, little or no given hierarchy can be an advantage; but there are also some risks of a delay in the decision making process, residing in lengthy voting processes and inherent high transaction costs.

The factor of time has not yet been addressed in terms of diversity of the team members' cultural backgrounds. Time sensitivity and the method of interacting with time for individuals from various societies can be very diverse. In virtual cooperation, employees often operate in different time zones, and, as a result, they must keep clear time guidelines for real-time communication. In cultural theory, one makes a distinction between the monochrome and polychrome perception of time. For the former concept of time, the tasks are processed sequentially, while in the polychrome concept many tasks are executed simultaneously. According to Hall and Hall (1990), the above mentioned differences in the *culture of time* lead to essential differences in behavior between monochrome- and polychrome-oriented people in as far as monochrome

individuals focus more on the task itself than polychrome-oriented people, and thus the obligation to stick to the time guidelines is much higher.

5.2.2 Media Competence

In the field of media competence, two aspects seem to be most important. Firstly, the proficiency and experience in choosing the most suitable communication instrument depending on the volume and the complexity of information exchange. Secondly, communication standards have to be agreed between team members to guarantee a certain level of efficiency in communication.

Proficiency and Experience with Media Application

Communication is obviously a central success factor of virtual team work. For an effective use of existing media, every virtual team member should have proficiency and experience and possess a basic affinity towards modern communication technology. Communication channels could be differentiated in synchronous and asynchronous technology. Video conference, live chat, and telephony are the best-known tools of synchronous communication, whilst the use of e-mails, fax, answering machine, or web-based forums illustrates an asynchronous type of communication. With increasing complexity and quantity of relevant information, the teams work more with synchronous media for information exchange (Bell & Kozlowski, 2002). The experience of using different media is also important for developing informal relationships. Digital communication also transmits informal signals, but with a certain time delay. But, for interpreting intentions and signals, it is necessary for the media user to possess a sharp awareness gained through experience and training.

Structuring of the Communication Process

The key to communication efficiency is the agreement on standards concerning issues like the availability of team members as well as the expected time span for giving feedback when using asynchronous media. These communication standards gain importance when the team members work in different time zones, since the time frame for synchronous communication is limited and the information flood must, therefore, be reinforced by the use of asynchronous media. An advantage in virtual collaboration is the use of a uniform software system which is suitable for document management and, moreover, also unifies all the elements of synchronous and asynchronous communication on one digital user interface.

5.2.3 Methodological Competence

The complexity of problem solving reflects itself in the diversity of the team composition; experts from different disciplines cooperate in a virtual work

room. Resolving complexity or handling tasks in a virtual team requires methodological competence in efficient knowledge management; otherwise, the knowledge potential of the team members could only be insufficiently explored. The methodology reflects the three phases of knowledge creation: identification phase, application phase, and transfer phase.

Identification Phase

At the beginning stands the identification of different knowledge areas to and a screening of the participating experts and the fields of knowledge and experience each could bring to the task. This socialization process in the team extends, however, not only to the visible expertise documented through education, occupation, and other external characteristics, but also to an identification of knowledge that must be more comprehensive. According to an OECD study (2000), as well as others, knowledge is divided into four categories: *Know-What, Know-Why, Know-How, and Know-Who*. Factual knowledge comes under *Know-What* and is saved in the form of information in data bases. *Know-Why* is the theoretical and universal knowledge of basic principles, models, and structures of nature, society, and the human mind. *Know-How* is defined as the application skills used in executing endeavors. The last element of knowledge shows a close relation to practice, and in this respect it is context-specific, has an instrumental character, and is also based on experience. The *Know-Who* can be interpreted as a knowledge network, which means the knowledge about other experts or cooperating partners. Here social skills also matter for networking in terms of communication and cooperation with different groups of people. Taking into account this variety of categories, every expert in a team could be characterized as an individual type of Knowledge-Box (see Fig. 5.2).

The difficulty of knowledge identification in the initial phase of the team building lies in the fact that some of the above mentioned elements of knowledge are difficult to recognize for an external observer because they concern experiential knowledge that is not codified. Polanyi (1967) makes the distinction between implicit and explicit knowledge. Implicit knowledge, also known as tacit knowledge, is related to personal experience, is context-specific, is normally not codified in a documented form, and is therefore also difficult to

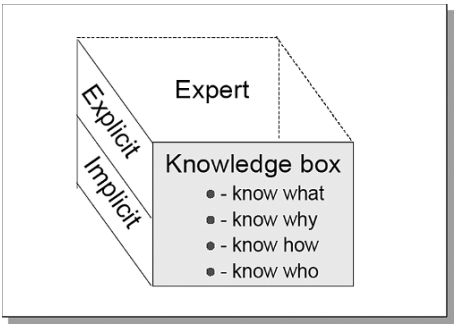

Fig. 5.2 Expert as a knowledge-box

communicate. This covert form of knowledge contains both specific elements from a pool of practical experience, also called procedural knowledge, and elements of analogy building, plus a subjective perspective of reality and the future. In contrast, explicit knowledge exists in words, numbers, data, or documented facts so that it is objective, revisable, and easily transferable. With encoded knowledge (language, signs, symbols, terminology, etc.) each person has access to the information. In this regard, Nonaka and Takeuchi (1997) point out that western knowledge societies focus primarily on explicit knowledge, whereas in the Japanese understanding this kind of knowledge is seen only as the tip of a *Knowledge Iceberg* and much more attention is paid to implicit knowledge. Explicit and implicit elements of knowledge are, according to Nonaka and Takeuchi, complimentary to each other and are not considered separate.

In this first phase, it is essential to identify all areas of knowledge, explicit and implicit, which team members could contribute to solve complex work tasks. A first step towards knowledge identification could be a questionnaire for every team member, which refers to the importance of certain information. This could lead to a detailed profile of his/her personality, education, professional development, and his or her field of interest. It is also possible to complement the profiles through self-assessment of strengths and weaknesses by each team member. The identification phase continues after the first meeting of team members with experience exchange and brain storming with regard to the task. Upon receiving information on each team members' profiles and completing their own self-assessment, every team member has the opportunity to complement his picture of explicit knowledge about the others with personal insights at a face-to-face meeting.

Application Phase

In the Application Phase, the concept of problem solving is developed. Due to the interaction within the team, the links between knowledge elements continue to be built so that the personalized knowledge of the team can be transmitted via these links. In addition, the links that were not previously connected to the human interface now lead to the expansion of the knowledge base of the team, thus creating new knowledge. Nonaka and Takeuchi (1997) particularly emphasize the importance of the externalization of implicit knowledge elements. This process of knowledge transformation from implicit into explicit knowledge could be strengthened by the application of metaphors, analogies, and models as a supported communication form. Codification plays an important role in transforming implicit knowledge into explicit knowledge. Only those who know the code have access to the knowledge base. Therefore, it is vital for the communication among the team members to follow common codes so that difficult terminology can be simplified into a generally understandable medium.

Transfer Phase

In this phase, the solution concept is transmitted from team level to corporate level. The visible part of this transformation process is in the presentation of the

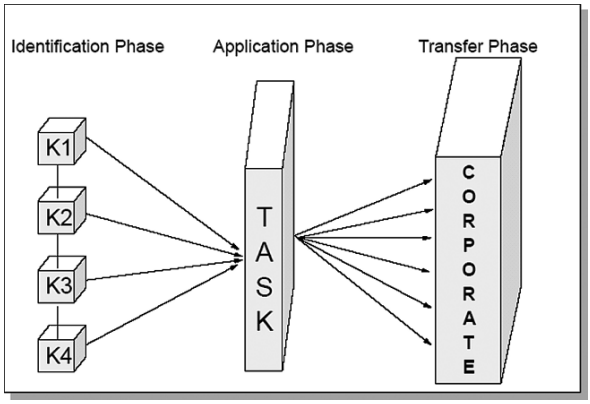

Fig. 5.3 Knowledge management in a virtual team

solution to senior management and the translation of explicit knowledge into advertising efforts, patents, products, and services. Additionally, it is important that this transmission process of information also includes the implicit and so far uncodified knowledge which team members have gained due to experience in accomplishing complex goals. This solution model could also possibly be transferred towards similar problem areas. The necessary transformation of implicit knowledge into explicit knowledge could be transmitted in the form of experience reports, hand books, and a reflection of the team by means of *Lessons to be Learned*.

In a nutshell, the full exploration of knowledge resources within a team of experts requires a systematic approach towards knowledge management (see Fig. 5.3 for summary). As team workers need to know about structure, methods, and techniques to identify, apply, and transmit knowledge, these competences in knowledge management are basic conditions for success.

5.2.4 Synthesis of the Requirements for Virtual Teamwork

According to the above analysis, the job specification of teamwork in a virtual context can be structured into three competence areas: social, media, and methodological competencies. Within every competence field, there are specific elements of high importance for the success of virtual teamwork. The consolidated competence profile resulting from this is shown Fig. 5.4.

If one analyzes the previously developed job specification of a virtual team member two aspects stand out:

1. The profile of competencies combines two types of elements: cognitive and personal attitudes – both have similar relevance. This statement is in line with the OECD's (2001) definition of competence: *A competency is more than just knowledge and skills. It involves the ability to meet complex demands, by drawing*

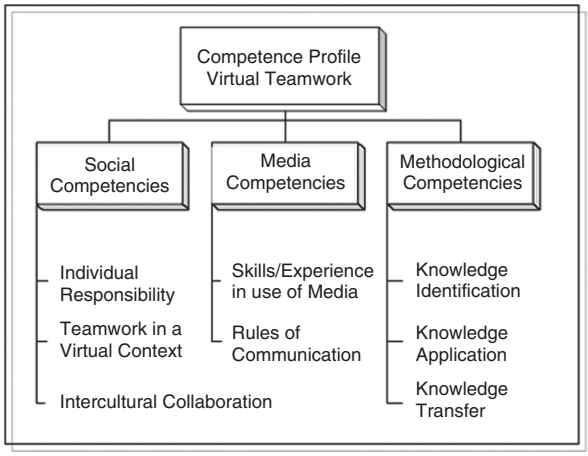

Fig. 5.4 Overview of the competence profile for virtual teamwork

on and mobilizing psychosocial resources (including skills and attitudes) in a particular context (p. 6). The OECD's definition makes explicit reference to the fact that competencies are closely correlated with their specific context of application. Therefore, the learning environment for developing competencies has to be context-specific as well.

2. The competence profile for virtual team work developed here is not restricted to this specific purpose. In today's global living environment, nearly every employee needs social, media, and methodological competence. Therefore, a high degree of similarity with other definitions and categories of extra-functional skills in social sciences could be found. For example, within the OECD project "*Definition and Selection of Key Competencies* (DeSeCo)" three similar categories of competences are defined: (1) Using tools interactively, (2) Interacting in heterogeneous groups, and (3) Acting Autonomously (OECD, 2001: 3).

Does the similarity between the competence profiles imply that everyone who successfully masters living in the modern and complex western industrial society, and exhibits the previously defined transferable skills, also has the ability to work successfully in a virtual team? This is obviously not the case. There is one aspect not previously referred to that is of high relevance: the degree and the combination of various competencies, which is what determines if somebody masters context-specific requirements.

Each context and each situation or objective requires a specific arrangement of key competencies in a specific combination and intensity. People from different life situations recur to their different competencies to various extents. For daily work routines, it is a combination of key competencies in lower intensity that is necessary. In contrast, the accomplishment of a complex task in a virtual team requires a combination of all kinds of key competencies on the maximum intensity level (see Fig. 5.5).

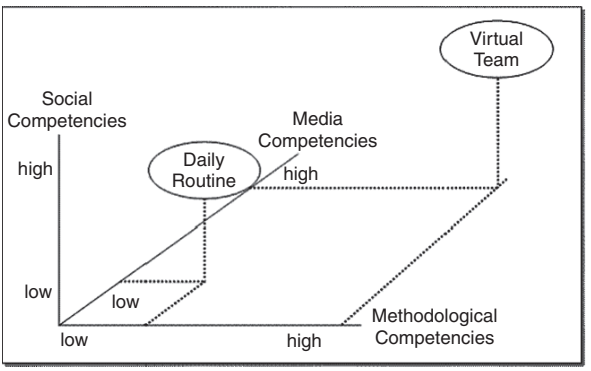

Fig. 5.5 Competence level virtual teamwork

5.3 Implications for the University Education System

The Bologna Process has led universities to understand the clearly stronger need to meet the requirements of business and society. Accordingly, it is the task of European universities to prepare graduates for the requirements of professional life, and this cannot be reached only through procurement of scientific factual core competencies, but must also comprise the procurement of non-scientific, personal key competencies. In a globalized work environment, media-based collaboration in a heterogeneous team will become a major challenge for young professionals. University education must therefore face up to the challenge of preparing students through knowledge mediation, as well as through learning key competencies for this soon-to-be predominant type of virtual work organization.

5.3.1 Collaborative Computer: Supported Learning as a Leading Principle

From a university perspective, there are generally two ways of providing support to students in learning key competencies:

- Explicit support is offered through separate courses with the primary goal of learning key competencies. The standard curriculum will be expanded by offering extra courses in all kinds of competencies.
- Implicit support is based on a redesign of the learning environment of factually oriented courses. The target of this strategy is to connect the learning of key competencies closely with the learning of factual competencies.

The first alternative is more attractive as it is simpler to offer separate courses instead of implementing a general modification in learning principles and environment. However, the explicit form of support does not allow for multiple dimensions of key competencies. The competencies contain cognitive as well as emotional, value- and action-based aspects and are context-specific; intervention is recommended as the type of support suggested in *Situated*

Learning Environments (Chur, 2006), 11). Accordingly, learning environments should show an adequate similarity with the context of application, so that educational processes of factual and key competencies merge, making synergies between both levels possible. Cognition and knowing are distributed over both individuals and their environments, and learning is "situated" in these relations and networks of distributed activities of participation. The argument is that knowledge and knowing cannot be separated from situations where they are used or where they take place. (Paavola, Lipponen, & Hakkarainen, 2004).

This term *situational approach* is based on the knowledge theories provided by the constructivist approach, whereby knowledge develops through an internal subjective construction of ideas and concepts. Every learner learns on the basis of his or her experiences and thereby uses values, opinions, ideals, and previous experiences. Learning consequently becomes an individual process, in that intra-personal factors interact with extra-personally situated components. The learning theory of constructivism thereby displays the following characteristics:

- Compared to other learning theories, in constructivism the knowledge does not come from external direct instruction to the learner, but rather develops through individual construction. Consequently, the instructor and the student take comparable role changes: the instructor is no longer the active part of knowledge mediation; instead, his or her role is limited to the design of the extensively authentic learning environment and he or she takes the role as a consultant or coach (Kirschner, Martens, & Strijbos, 2004).
- The learning process is self-directed by the learner to a higher degree with regard to the options of learning items, effort in learning time, and methods of knowledge acquisition. An intrinsic motivation for learning is taken for granted.
- Advancement in the learning process is supported by a learning environment which requests intensive collaboration and social exchange within a group. In the collaboration process, each team member becomes aware of multidimensional perspectives and, in the solution development process, the members also learn to include external perspectives.
- Success in the learning process is determined by the extent to which the learner manages to take a reflexive perspective on his or her learning. The OECD indicates in the DeSeCo Study that reflexivity is the core of key competencies. Reflexivity requires relatively complex thinking and action processes. It demands that the "the subject of a thought process become its object" (OECD, 2001). To make reflexivity possible for people who, for instance, have learned a specific technique means to subsequently reflect on this technique, put it in relation to other experiential aspects, and then to change or adjust it.
- The problem should ideally exhibit a high complexity and should be a challenge for the learners. The concept of advancing the learning process is closely linked with the requirements for the learners' performance.

Incorporating the progress in information technology of past decades, the constructivist theory of learning has continued to develop towards the theory of

Computer-Supported Collaborative Learning.[2] Here the learning process takes place within a group in which learners work together but remain spatially separated and deploy media to interact and communicate. The complexity of the task requires collaborative working and learning, which could, indeed, mean that sections of the task are taken up by each group member; but solving even a partial task requires close coordination, continuous exchange, and collective learning.[3] With media-based communication and Computer Supported Learning, the existing hierarchy between learners and teachers is purposely removed and restrictive classrooms disintegrate, so that the constructivist role change between the positions can happen. Kirschner, Martens and Strijbos describe Computer Supported Collaborative Learning as follows: "The context of CSCL, as for all learning environments, is a unique combination of the technological, the social, and the educational context. In CSCL, the educational context is one of collaborative learning, the social context is the group, and the technological context is a computer-mediated one" (2004, p. 7).

Supposing the design of the learning environment possibly produced a high degree of similarity between learning and application situations, there is a vast correlation between key qualifications required for virtual team work and the central characteristics of constructivist learning theory, as well as Computer-Supported Learning. In constructivism, the learner is considered first and foremost an individual, whereby the learning process is self-directed. Similarly, in virtual teamwork, employees have a high degree of individual freedom, but also have a high degree of responsibility.

- The hierarchy between learners and teachers is, in the constructivist theory, consciously removed. Here, it is parallel to the virtual world, in that the formal characteristics of authority are of low importance.
- Both in constructivism and the CSCL-Learning Theory, group learning or, rather, collaborative learning of complex tasks, is in the foreground. The group also underlies the virtual team as organization model.
- Media-based communication and Computer-Supported Learning are the perfect simulation of the virtual team's work environment in this case.

5.3.2 Implementation in University Education

The need for using the learning theory of constructivism as the guiding didactic principle in all areas and levels of university education makes a structural

[2] Computer Supported Collaborative Learning is abbreviated to CSCL.

[3] Collaborative and cooperative learning are not used as synonyms. In cooperative learning work, tasks are hierarchical in independent areas that are divided from each other; team work is needed only at the end for summarizing the single parts. In collaborative work, the division of the whole into parts is more or less impossible as the complexity of tasks requires a high degree of interdependence in work and solution processes.

reform of the educational system necessary, so that radical changes in the learning environment apply not only to involved individuals (learners and teachers), but also to the organizational structures of universities and faculties. Such individualization of the learning process is, in view of the high number of students, certainly not manageable on all courses and study programs, especially not on undergraduate programs and also not on all program modules. Additionally, the new role of the teacher as a coach, or alternatively as a consultant, changes not only the concept of teaching and the structure of teaching (lectures, seminars etc.); at the same time, there is also a major challenge for teachers who have always used traditional formal authority and hierarchy structures in adjusting to the new method of teaching.

In order to provide the best possible preparation of university graduates for virtual team work, universities must take further steps in the redesign of their educational structures. Computer-Supported Collaborative Learning should be implemented as the best way to mimic real-world working conditions of virtual teams, especially for post-graduate study programs. This condition is not sufficient to create an optimal simulation of virtual teams. In order to experience differences in culture, language, knowledge, and to develop skills necessary to cope with these differences, groups must reflect aspects of diversity. In the context of Computer-Supported Collaborative Learning, a program of study at a single university seldom provides the necessary multicultural mix, spatial separation among team members, and diversity of knowledge profiles.

A possible solution would be, in this case, the implementation of so-called virtual classrooms in cooperation with partner schools, preferably across national and cultural borders. Drawing on similar modules in the curricula of co-operating universities would make it possible to form heterogeneous students groups training with CSCL and working. This cooperation strategy among partner schools/universities requires a high degree of coordination between the teachers and students of member universities, so that the organization of virtual classrooms can probably not become the standard for all modules or curricula. Difficulties often result from differences in term schedules between countries, in examination/assessment procedures, and in scheduling and managing real-time video conferencing. Normally, this type of international project can mainly materialize thanks to the commitment shown by participating teachers, and less through the universities' organizational structure in place, which is why under the current state of things the internalization of CSCL remains insufficient.

However, the virtual classroom has proved to be a valuable co-operation project within an international university network that is going in the right direction. The coordination effort could be clearly reduced if the university network was to create a trans-national educational platform, in order to offer an innovative postgraduate study program designed according to the CSCL-principles. Finally, these international educational institutions would operate similarly to multinational companies with different locations across national

boundaries. Students from universities of different countries would bridge space and time in a virtual team and follow a coordinated international curriculum, so that Computer-Supported Collaborative Learning and working in heterogeneous groups would soon become a standard setup. This flexible form of organization seems to be an adequate type of organization in the information age where knowledge and education are no longer bound to the location of the university as the physical provider.

Such a postgraduate program should exhibit the following characteristics:

- On every module of the curriculum students learn in a virtual team. Each module begins with a short introduction phase during which students meet face to face. Stage 2 is the phase of Computer-Supported group Collaboration and ends with another face-to-face phase for the presentation of collaborative results and reflection on them. For learning about extra-functional skills, student has to attend introductory skills courses in knowledge management, media competence, and team work. These courses are compulsory.
- As a non-profit organization, the trans-national education platform is responsible for the quality of teaching and research. The quality of education is documented, on one hand, through an accreditation by worldwide operating agencies, and, on the other hand, through a corresponding ranking in the list of top universities. Additionally, a continuous evaluation of teaching modules takes place with the proven evaluation systems of network partners to be considered.
- To assure a maximum of diversity of the student group, the target group should consist of candidates having a post-secondary degree and some professional experience. On the grounds of personal development assessment, a limited number of undergraduate applicants should also be accepted. For efficient communication, applicants will provide evidence of adequate language skills.
- Student recruitment can occur through the university network, business networks or by online advertisements. Lecturers' availability should remain flexible depending on prevalent demand for the offered teaching modules. Correspondingly, a database with information on qualified lecturers could be drawn from the university network.
- As a legal entity the education platform is located in one country, nevertheless it generally acts independently of space and time. The organization of early- and late-term contact phases rotates among the partner universities.

5.4 Perspectives

With a *European Institute of Technology* (EIT), the EU wants to establish an elite institution to support research and teaching in Europe. In contrast to the MIT in Cambridge, the EIT is planned to be founded as a virtual organization based on a network of various European universities, research facilities, and

companies. The EIT will offer, among other things, Masters degrees and PhD programs, in those selected universities which contribute to the offer of teaching modules and lecturers (EU, 2006). This EU proposal for founding a virtual education and research facility based on a European university network is insofar welcomed, as it could trigger a movement towards network building and more intensive collaboration between European and non-European universities. The need in the globalized economy for young professionals to provide a certain profile of expert knowledge combined with key competences, all to be applied in the context of virtual team work, is evident. Therefore, university education needs to respond with a more comprehensive international strategy than before. Internationalization does not limit itself to lectures in English added onto the local curriculum or to building a network of partner universities solely for the purpose of student exchange. University networks have not been developed to remain an empty shell. They have to be filled with collaboration in research and teaching projects between network partners. A joint postgraduate study program offered by the network itself and delivered in the Collaborated Computer Supported Learning mode could pave the way for a further globalization in the market for higher education.

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Part II
Introduction: Advances in Business Education & Training - Open Part

Noah P. Barsky and Jakob Ravn

Today's dynamic global business environment requires professionals that can adapt to rapidly to changing markets and technologies. These forces require educator to think seriously about innovative ways to revolutionize business education to best prepare students for challenges of such a world. Such innovation requires careful attention to how business decision making requires thinking that transcends disciplines, nations, industries, and technologies. This volume contains articles that detail successful approaches that business educators have developed and implemented to solve real problems facing our institutions today and to vest students with the ethical and analytical abilities they will need to both compete and contribute to the betterment of others.

Shelley Smith and the late Victoria Mikelonis, in "Designing Business Education For Ukraine: Lessons Learned," (Chapter 6) detail how the University of Minnesota (USA) aided a nation in designing and implementing business management programs over a 6-year venture. Developing business education in Ukraine, then, required a systemic approach that: (1) developed a shared vision of education in an emerging capitalist economy, (2) introduced faculty to new content and processes relevant to business education, and (3) developed training programs for faculty and administrators to deliver revised curricula.

Peter Berends, Ursula Glunk, and Julia Wüster, in "Personal Mastery in Management Education" (Chapter 7), show how "the social domain of organizations" require personal mastery and wisdom in dealing with complexities that mechanistic approaches to management education traditionally ignored. These authors describe a 1-year personal development trajectory that the University of Maastricht (Netherlands) introduced in its graduate program of management. This course of study offers unique opportunities to prepare students for the complexity of business life by developing their personal leadership capacities and an appreciation for their positive impact on others.

Larry Pate, William Lindsey, Troy Nielson and Melanie Hawks in "Innovations in Graduate Business Education: The challenge of Developing Principle-Centered Leaders" (Chapter 8) also argues for personal development in

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business education. Principle-Centered Leaders "believe in and are committed to a set of moral principles, and then remain true to those principles in their actions and decisions". The widespread corruption scandals and criticism of Business Schools and business education are related to traditional approaches to business education which are poorly designed to teach leadership in general and Principle-Centered Leadership in particular. The chapter argues for new and alternative approaches which develop leaders who focus more on principles than pretended profit.

Roulla S. Hagen argues in "The Misalignment of Management Education and Globalization: Conceptual, Contextual and Praxeological Issues" (Chapter 9) for curriculum design which interweaves two parallel pedagogies of conceptual and contextual learning with personal and professional development. The chapter presents a range of the critiques leveled against management education curriculum and makes an important distinction between "too much theory badly taught" and "conceptual learning which enables the creation of new knowledge to solve problems as yet unknown".

Herman van den Bosch in "Master of Science in Business Administration or MBA. Does it matter?" (Chapter 10) investigates the consequences of management education in an empirical study of two different programs: a MBA program and a Master of Science program in Business Administration. The chapter tests the hypothesis presented by Mintzberg (2004) that management education creates a "MBA mindset" which differs from a "desired mindset of managers". Interestingly, the findings do not confirm the hypothesis.

Dirk Tempelaar in "The Role of Critical Thinking Skills in Student' Attitudes toward Business Subjects" (Chapter 11) reports on the relationships between critical thinking skills, attitudes towards subjects and course performances. The study shows that student' motivations for behavioral oriented subjects, such as organizational theory and marketing, are hardly relevant. This is in itself new to most educational theories. But even more surprising, the study also shows that student' motivations for mathematics are important for learning the soft subjects of organization theory and marketing.

Herman van den Bosch in "A strategy for business education in a changing world" (Chapter 12) investigates the level of strategic choices made within 25 business schools. The chapter addresses the often implicit strategic decisions regarding the identity of business education. Six strategic choices are identified and representatives of 25 business schools have quantified the actual level of implementation in their organization. The study shows that business schools in general still have a long way to go regarding the implementation of strategic choices.

Chapter 6
Designing Business Education for Ukraine: Lessons Learned

S.L. Smith and V.M. Mikelonis

6.1 Introduction

Central and Eastern Europe's (CEE) transition from an autocratic political system with centrally planned economies to democratic systems with market economies has been difficult and complex. Ukraine faced particular difficulties as its economic decline was characterized by negative economic growth, hyperinflation, and the loss of entire industries that had been formerly linked to Soviet markets. Rapid interventions were needed to prepare Ukraine for the global economy and move it from crisis to recovery, and to develop a sustainable economic system. While some CEE countries recovered at a relatively rapid rate (3 to 4 years), these problems persisted in Ukraine 10 years for nearly after independence.[1] Reversal of these negative patterns of development required the introduction of comprehensive economic and educational reforms similar to those introduced in other CEE countries nearly a decade earlier.

Significant investments, particularly in human and social capital, helped CEE countries to succeed in completing the transformation (Pawlowski, 2005; Archibald, Banu, & Bochniarz, 2005). Transformational leaders, those who joined the European Union in May 2004, effectively addressed one of the major transitional problems – the weak alignment between the traditional knowledge, skills, and attitudes in the higher education and the new ones needed for success in market-oriented business environments (Bochniarz, 2005).

The University of Minnesota took the lead in assisting Ukraine in designing and implementing two programs in business management at the undergraduate, graduate (MBA), and post-diploma certificate (PDS) levels. These programs lasted 6 years. Its overall goal was to significantly enhance the ability of Ukrainian educational institutions to educate a cadre of business professionals who could meet the entrepreneurial challenges faced by private business in an

[1] August 24, 1991.

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increasingly competitive global economy. Annual surveys of over 600 Ukrainian educational institutions and business organizations provided data on the effectiveness of our training and the satisfaction of employers with graduates.

The Office of Nations in Transition at the University of Minnesota formed partnerships with two American and four Polish universities.[2] Each of these institutions has been accredited by national and international organizations, and all assisted Ukrainian institutions in building high quality programs to meet the needs of the global marketplace.

Funded by a grant from U.S.AID, the Consortium for the Enhancement of Ukrainian Management Education (CEUME) was established in 1999 to deliver a 3-year program (1999–2001) to develop Western-style undergraduate business education in Ukraine, strengthen the management of educational institutions, and accelerate professional development of faculty. The second program, Business Management Education in Ukraine (BMEU), was later designed as a 5-year program (2002–2007) to develop MBA, PDS, and executive education programs in Ukraine. Unfortunately, the BMEU project was terminated by U.S.AID in 2005, mid-way through the project.[3]

Between 1999–2001, CEUME trained almost 8000 participants–4600 representing faculty and approximately 2000 administrators from over 90 academic institutions – as well as members of the business and NGO communities. Over 40 of these institutions had a critical mass of trained faculty to set up Western-style baccalaureate programs. BMEU, followed, concentrating on helping 26 institutions and 90 high-potential faculty to design advanced business courses and develop MBA and PDS programs.[4] Despite the premature ending of the project, new MBA and PDS programs are still being launched at partner institutions. Faculty from both projects now teach over 50,000 students annually using this new curriculum, have developed over 800 new courses, and use over 340 cases studies developed during the project.[5]

The success of these programs can be attributed directly to five design principles, which have become the touchstones for business education in Ukraine:

1. Designing *integrative interdisciplinary education* rather than exclusively discipline-based education.
2. Balancing *hard and soft skills* in the curriculum.

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[2] University of Michigan, Northwestern University, Warsaw School of Economics, the University of Warmia and Mazury in Olsztyn, the Leon Kozminski Academy of Entrepreneurship and Management, and the Higher Business School in Nowy Sacz/National Luis University.

[3] The early termination of the BMEU Project was because U.S.AID decided to eliminate *Economic Growth Programs* in Ukraine and other CEE countries due to the growing budget deficit and changes in funding priorities.

[4] Mostly faculty members and university administrators.

[5] With a total of over 200,000 graduates (*Business Management Education in Ukraine: Final report, 2005*).

3. Focusing on encouraging a *paradigm shift*, which includes attitude change, the need for continuing education, and "learning how to learn".
4. Designing curriculum based on *stakeholder needs and accreditation standards*.
5. Developing *partnerships* with stakeholders (including business persons and students) as well as partner institutions in the United States and Poland.

Because the implementation of these five principles required that we turn the system of Ukrainian higher education "on its head," the training programs designed for the Ukrainian faculty needed to be fundamentally transformational in nature in order to succeed. Mezirow defines transformational learning as

> . . . an enhanced level of awareness of one's beliefs and feelings, a critique of their assumptions, an assessment of alternative perspectives, a decision to negate an old perspective in favor of a new one, an ability to take action based on the new one, and a desire to fit the new perspective into the context of one's life (1991; 161).

In addition, Mintzberg's organizational theory and analysis of academic culture (1979) helped to serve as a guide in our approach to managing this change. Mintzberg describes *professional bureaucracies* as inflexible, well-suited to standard outputs, but not to the production of new ones. Innovations occur slowly through the change of professional and organizational standards (p. 375), and this rigid professional model was highly descriptive of the academic systems found in Ukraine. While one could argue that within education the "passing on" of existing bodies of knowledge is, to some degree, the heart of the educational process, historically there had been a significant lack of any new information allowed into the educational system. Further, Mintzberg stresses that professional bureaucracies thrive in a stable environment, and Ukraine was hardly stable.

Because the economic and academic systems were in flux and no longer stable and because we were focused on helping to facilitate rapid and dramatic change, this model was no longer serviceable. It was, in fact, a hindrance to what we hoped to accomplish. These activities were much more suited to the processes inherent in Mintzberg's description of an *adhocracy*.

In an adhocracy, knowledge is dynamic, not static. Existing knowledge and skills become the foundation for building new theories and perspectives, requiring the combination and recombination of different bodies of existing knowledge as well as the discovery of new knowledge and processes. As a result, members of an adhocracy must break through the boundaries of what is known or accepted and open the door to new possibilities. Cooperation, interdisciplinarity, process competence, a constructivist approach to the management of knowledge, and participatory research are all vital. The adhocracy thrives in an ambiguous or rapidly changing environment where the innovative manipulation of new knowledge is essential.

An innovative program designed for business education in the rapidly changing economic and academic environment of Ukraine would require taking on the characteristics of an academic adhocracy and would therefore involve:

- Lifelong learning opportunities.
- Training customized to the needs of companies and individuals.
- More exposure to the international economy.
- Greater use of new technologies.
- Closer links between management development and performance (Karpin 1995; 1054)

Developing business education in Ukraine, then, required a systemic approach that attacked the task on three fronts: (1) increasing communication and developing a shared vision at a macro-level (national, institutional, and organizational); (2) introducing faculty to new content and processes for delivering business education, and (3) the development of training programs that could provide academic faculty and administrators with the expertise necessary to make it happen. The next sections of this chapter will discuss how each of the five design principles was implemented.

6.2 Integrative Interdisciplinary Education

Traditionally, higher education in Ukraine was discipline-specific–designed to produce specialists in a particular disciplinary area. Consequently, faculties of economics, mathematics, and physics, for example, provided baccalaureate degree programs that produced graduates who were specialists in narrow disciplinary fields. Each provided theoretical and historical views of these subjects, but did not provide practical training for real-world applications. Business and management education, which by its very nature is an interdisciplinary field, was not taught in Ukrainian universities. Introducing Western-style undergraduate business programs required convincing Ukrainian faculty to abandon their "silo" mentality and provide interdisciplinary courses which stressed interactive teaching techniques, problem-solving, active learning, and applied research, thereby preparing students to play an active role in Ukrainian business enterprises.

Western-style business programs, unlike their CEE counterparts, produce generalists at the undergraduate level, who have a broad learning base in fields such as marketing, business management, computer applications, accounting, micro- and macro-economics, business communication, organizational communication, team building, and human resource management. Their students use case studies involving real business problems, and they are expected to apply what they have learned in framing their solutions. They learn to work in teams and present their solutions (both orally and in writing) to management audiences who will make decisions based on their findings. Even this cursory description makes it obvious that the two educational systems were dramatically different in goals, objectives, content, and teaching methods.

Integrating these two systems went beyond changing content, and required the introduction of new teaching methods to model the kind of thinking and behavior expected of students in an actual business environment. It also meant abandoning the traditional "ivory tower" role of the professor. It required faculty to become active problem-solvers who were willing and able to partner with both students and business professionals in consulting on and researching current business issues. Bringing the experiences of business professionals and working students into the classroom meant that the faculty were not expected to have all the answers. It required the creation of *learning communities*.[6] in which faculty, students and business professionals engaged in an active dialogue in the classroom around current issues in business and management. In this way, the classrooms became active and cooperative learning environments where critical thought.[7] was valued and encouraged, rather than places for passively conveying information for students to record. Moreover, students were expected to question what they were learning and be proactive in the classroom. In other words, transforming business education in Ukraine required an educational paradigm shift that reinvented the Ukrainian higher educational system.

Teaching problem-solving, critical thinking, communication skills, and teamwork became as important and legitimate as teaching content, and case-based learning became a vital tool in teaching these soft skills.[8] Since business-based case studies did not exist, developing Ukrainian business cases quickly became a priority. We instituted annual case study competitions, provided substantial cash awards to winners, and published and distributed the best cases. These case books, like all the resource materials, were provided free of charge to faculty attending our training courses and were designed to be used by attendees in designing their own courses.

In the larger context, introducing Western-style business education required gaining the approval of the Ministry of Education and Science. The Ministry had to approve up to 80% of undergraduate and 50% of master programs curricula for programs to be certified, and would not provide financial support to public institutions for any uncertified programs. As a result, one of our biggest challenges was to convince the Ministry to release its strangle-hold on Ukrainian higher education by providing more autonomy to institutions designing Western-style business programs.

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[6] In a dynamic learning community, all members share a desire to support each other in the process of learning; everyone learns, including the professor (cf. Wilson & Cole, 1997. Transformative communication is the norm, with both sender and receiver of messages changed by the interaction (Pea, 1994).

[7] Critical thinking has been defined (Halpern, 1997) as "thinking that is purposeful, reasoned, and goal directed" and "the ability to analyze carefully and logically information and ideas from multiple perspectives."

[8] The merits of case studies in business education are well known (see, e.g., Barnes et al. 1994).

6.3 Balancing Hard and Soft Skills

> *I attended the first two summer institutes, the first national conference, and four administrative retreats sponsored by CEUME. So I observed first-hand the effects of this transformational paradigm shift on me and my colleagues. I realized that the tools to change the paradigm were those tested in the West and presented in the trainings: business teams, case studies, project organization, and case competitions. They helped us change our mentality [way of thinking] (Nitkin, Yuri, Personal communication in "Re-inventing the academy in Ukraine," November 13, 2001).*

Challenges that had to be overcome to provide Western-style undergraduate business management programs in Ukraine were attitudinal, historical, and interdisciplinary. Most faculty had no business experience and were specialists in narrow disciplinary fields; the content of many of their courses was outdated or inappropriate for preparing students to enter the new market economy. Students were expected to take notes and be prepared to "regurgitate" lectures presented by the professor. Professors were ill-equipped to teach students the skills needed to solve real-world problems, communicate their solutions to people who would have to implement them, or to take responsibility for the solutions they proposed. In the past, students and faculty had been conditioned to be passive rather than active, retiring rather than proactive, accepting rather than questioning, and recorders of information rather than problem-solvers.

Convincing Ukrainian faculty to abandon the traditional methods and embrace active techniques was another major challenge. Strong cultural, as well as academic and disciplinary traditions needed to be challenged, re-examined, and rearranged to encourage faculty to adopt a Western model of business education. Faculty needed to understand why they should abandon a comfortable method for a new, as yet untested one. Interactive teaching required a shift from instructor-centered education to student-centered education, requiring faculty to shift their role from the "sage on the stage" to the "guide on the side," .[9] and make more effective use of case studies, simulations, and business games.

Faculty also needed to learn how to develop curriculum based on experiential learning theory (Kolb, 1995). This involved convincing them to concentrate less on content objectives and develop performance objectives in which students were expected to produce and present a product to an actual audience in order to demonstrate their knowledge. Moreover, students had to be taught to cooperate and work in teams to design solutions to complex business problems. To understand and teach team building, faculty had to learn how to manage teams and to devise new ways of grading team projects. Section 1.7 will detail how faculty training on these issues was achieved.

Professor Nina Ushakova, Pro-rector of the Economics University in Kyiv and Chairperson of the Ministry of Education and Science's Curriculum

[9] Barr & Tagg (1995).

Committee, acknowledged the value of CEUME's approach in helping her institution decide to adopt the curricular innovations:

> CEUME was a program whose time had come. The Consortium helped us to see what was going on abroad. We didn't have a systematic approach to the reform of management education before CEUME. But proactive and targeted work started after CEUME. We started the active development of Ukrainian case studies. Seventeen of our teachers submitted cases to the case [study] competitions, and 13 received prizes. . . .We united three universities and two academies for trade to disseminate methods and train specialists using CEUME materials and methods. More of our teachers [that is, more than the 41 who participated in CEUME training] liked using cases and initiated their development. The students liked such lessons more than traditional lectures. They liked the participation, feedback, debate and decision-making. When the bell rings now, the students don't want to leave the classrooms.[10]

This success was indicative of the curricular and pedagogical changes that were taking place in all the participating institutions in Ukraine.

6.4 Continuing Education and Attitude Change

> *CEUME built a network of faculty across Ukrainian institutions. Now a lot of institutions are moving in the same direction; they respect each other more. State institutions even came to IMI [a private institute; one of the first to adopt Western-style MBA programs] to consult about how we implemented our programs. . . CEUME also built a network of Ukrainian institutions. . . [and] the notion of faculty development. . .. New programs and courses came from CEUME. This is the most successful of all the projects because it is concentrated on people. It has also been successful with the Ministry—their view has changed tremendously. The Ministry has even consulted with us!*.[11] *(Voronova, Alla. Personal communication in "Re-inventing the academy in Ukraine," November 12, 2001).*

The Ukrainian faculty and administrators recognized the need for gaining Ministry support for these new courses and curricula. However, support was slow in coming because the Ministry did not initially introduce these changes. So, faculty and administrators faced the problem of how they would finance Western-style business education. By introducing the concept of tuition-based continuing professional education to which companies could send high-potential

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[10] Personal communication with Professor Nina Ushakova, (November 13, 2002). In Mikelonis, V. "Re-inventing the academy in Ukraine," (2002).

[11] Interview with Professor Alla Voronova, Director of Marketing and International Relations at the International Management Institute (IMI) in Kyiv, November 12, 2001. IMI is a private institute and one of the earliest institutions to develop MBA programs. Its first Director was an American, Mr. Andrey Masiuk, and it was initially supported by foreign donors. Such private institutions were looked at askance by public institutions, so having the public institutions actively consulting with them was a *coup* for IMI and increased their credibility.

managers, an alternative financial stream was created. Once the idea caught on, the institutions became less reliant on the Ministry for support, thereby robbing the Ministry of its stranglehold on curriculum. Without Ministry support, however, these programs did not have certification. Luckily, this certification was not particularly important to managers in the programs. As businesses, administrators, faculties, and students continued to exert pressure on the Ministry, it eventually relented by approving and certifying more of these programs.

Once Ukrainian faculty were convinced to use a more active and interactive curriculum, another important change in developing undergraduate and graduate business curricula was introduced. Faculty needed to see the importance of continuing education for managers and entrepreneurs in small, medium, and large businesses that were restructuring for privatization. The education of adult (non-traditional) learners required the introduction of up-to-date information and the development of clear goals that were relevant to the learners, practical, and provided hands-on training to the participants (Knowles et al., 1998). This meant that faculty had to begin to consult and collaborate with all stakeholders (including business professionals and students) to learn what kind of training was needed, and to design and deliver such training. It was not a simple process to encourage faculty to start consulting practices. After special MBEU trainings (2002–2004), the inertia was finally overcome. Particularly successful were the 90 MBA leaders, who increased the number of consulting projects from 92 in 1999–2002 to 238 in 2002–2004, a growth rate of 259% (BMEU, 2005). Consulting with business and industry and providing executive training on site, gave faculty first-hand knowledge of the problems and issues facing Ukrainian business, enabling them to design effective teaching cases and bring what they learned into the classroom.

Likewise, consulting with business professionals provided faculty with an opportunity to: (1) engage in action-based field research to discover the major issues and problems facing Ukrainian business; (2) suggest different approaches to these problems; (3) apply theory to practice to add verisimilitude to their classes; and (4) gain access to business professionals who became classroom resources. These interactions also enabled business professionals to familiarize themselves with these new business programs, thereby enhancing their respect for the faculty, and provided business leaders with opportunities to observe the students in action – often leading to offers of internships and full- or part-time employment.

Such experiences convinced faculty that continuing education was not only important for managers, executives, and entrepreneurs, but also for themselves if they were to keep abreast of fast-paced and changing business environments. They found the challenges of assisting businesses invigorating, reinforcing the need to draw from interdisciplinary sources in seeking solutions to business problems. In essence, they "learned how to learn," passed this skill on to their students, and discovered a new clientele in non-traditional students and new financial streams to pay for business education.

6.5 Addressing Stakeholder Needs

> *A year ago we started to get some money from Ukrainian businesses. We also changed our attitudes toward students. An Alumni Association was created after the study tour to the United States, and we designed a website. We grant five-year degrees (MSci), but now we include more knowledge about business and the business context. The Alumni Association is helping with placement. [and] is placing students in strong companies. So the two areas in which our Alumni Association works are on job placement and career development. (Krikunov, Mikhail. Personal communication in "Re-inventing the academy in Ukraine," November, 2001.)*

In designing programs to meet the specific needs of Ukrainian faculty, we conducted several studies to improve our understanding of the deficiencies (what must be built) and barriers (who and what offered resistance) to the development of the human capital necessary for the transformation of Ukrainian education (Krazhan, 2005). The joint efforts of Ukrainian universities, business schools, and the CEUME project resulted in the publication of a *Blueprint for Action* (2001), involving input from over 1400 participants.

This strategic, programmatic document identified Ukraine's most urgent needs, proposed actions towards meeting those needs, and identified the main stakeholders who had an interest in developing business education:

1. Students.
2. Businesses.
3. Faculty.
4. Business school administrations.
5. Public at large.
6. National, regional and local governments.
7. Ukrainian and foreign donors.

Recognizing the variety of stakeholders was a conceptual breakthrough for Ukrainian academics and administrators. Because most state business schools were almost entirely dependent on government funding, their main concern had been preserving that funding rather than serving the interests of students and businesses. The emerging market economy and increasing demand for high-quality practical education from customers forced academia to pay more attention to the stakeholders who were now paying tuition (students and businesses). Programmatically, the initial stages of the project needed to focus on the needs of the first four stakeholders. Certainly the economy, affected the public at large, but the road between business education and economic improvement was a long one. In the same vein, getting government and other funding sources on board would require clear indications of program success, i.e., was the new direction of business education worth the investment.

Stakeholder needs were identified in surveys conducted among business school students and businesses (CEUME, 2001). Results indicated that the vast majority of students believed there was a high demand for broadly educated business generalists. To achieve this, students desired:

1. A more contemporary curriculum.
2. Learning high-quality theoretical knowledge *as well as* learning practical skills and getting real world experience.
3. More time working as interns in companies.
4. Increased use of interactive learning methods (more than half of their total class time), which they considered much more effective than traditional lectures.

Additionally, the majority of business respondents believed that:

1. a traditional business education degree was not a critical criterion in selecting a new employee or would not be a factor in hiring;
2. experience was more important than a business degree;
3. the quality of degrees from Ukrainian institutions did not guarantee appropriate skills;
4. education programs at Ukrainian business schools did not correspond to current business needs in terms of specialization, curriculum content, and development of interpersonal skills; and
5. attitude and communication skills (soft skills) ranked above theoretical knowledge in predicting workplace success (CEUME, 2001).

The surveys also indicated the growing popularity of graduate level business education, particularly MBA and PDS programs, including shorter, specialized executive training. Because Ukrainian businesses expressed a lack of trust in the quality of Ukrainian business education, they preferred sending their high-potential managers to internationally recognized foreign programs.

These opinions and attitudes changed significantly in the following years. In 2005, the majority of businesses in Ukraine claimed that human resource development is a priority for their organizational strategies within the next three years. Yet, only half of the surveyed organizations had either an individual or a department directly involved in human resource development. More organizations offered some type of training to employees. Constraints in this area included a lack of financial resources, a scarcity of existing quality programs, and inadequate information about what exists on the market.

The improved relations between businesses and business educators became evident when 2004–2005 surveys indicated that businesses now considered Ukrainian (rather than international) educational institutions and consulting companies as their first choice. Such a marked change in attitude and practice by Ukrainian business indicates the increasing trust and value they are placing on Ukrainian business management education. While topics such as Sales, Marketing, and General Management remained in high demand by managers and business owners, the 2005 priority topic for training and courses became Human Resources Management (see Table 6.1). Additionally, there was a growing awareness among businesses of the benefits of job candidates having MBA degrees, with a large proportion of responding employers saying they would prefer to hire candidates with Executive MBAs or MBAs obtained in Ukraine or abroad (BMEU, 2005).

Table 6.1 Topics of the trainings most demanded by business ($n = 99$)

Topic	(%)
Human resources management	51.0
Marketing	46.9
General management	39.8
Sales	37.8
Financial management	29.6
Corporate governance	28.6
Organizational behavior	27.6
Information technology	26.5
Public relations	24.5
Operations management	23.5
Project management	22.4
Change management	21.4
Logistics	20.4
Accounting	20.4
Leadership	19.4
Legal environment of business	19.4
Research methods	18.4
Ethics	12.2
International relations	11.2

Source: Business Management Education in Ukraine: Progress Dynamics (2005). In *2005 Research Yearbook*, CEUME, Kyiv, 18.

6.6 Building Social Capital Through Partnerships

> *Combining Polish, American and Ukrainian teachers was natural because we have a direct interest in the subject. The experience here in Ukraine is different than in the United States. We do more mutual [cooperative] learning. It is not always easy for us to understand the U.S. teachers, but passing it through the Polish experience helps. (Sharov, Oleg. Personal communication in "Re-inventing the academy in Ukraine," November 13, 2001.)*

At the beginning of the transformation, there was a deep distrust among the major stakeholders in business education, particularly between academics and business leaders. As more faculty consulted with business, more business leaders were invited to speak to students, more businesses agreed to provide student internships, and business stakeholders began to support curricular reform as a way of improving of the quality of Ukrainian business education. This complex issue was addressed in several ways. One successful approach for building mutual trust and confidence was by forging partnerships between businesses, government officials, colleagues from other academic institutions in Ukraine and colleagues from US and Polish universities. These stakeholders were brought together in annual fall conferences (200–300 participants) that were preceded by series of roundtable discussions in all six regions of Ukraine.

During these regional roundtable discussions, participants identified problems of primary concern to all of the participating stakeholders in the region, suggested approaches to solutions, recommended courses of study for students, requested continuing education programs, and indicated their willingness to support PDS and MBA programs for their high potential managers. They then prioritized and categorized the results of these discussions in preparation for the fall conferences. The topics generated in all six regions were compiled and became the basis for program at the conferences.

Conferences were attended by representatives of the regional roundtables, invited guests from across Ukraine, and business, education, and international experts who could speak to the issues raised at the roundtables. The conferences also gave all of the stakeholders, including Ministry representatives, an opportunity to dialogue, share insights, and decide how to implement plans for improving Ukrainian transition to a market economy. The conferences demonstrated the value of establishing partnerships between stakeholders and modeled the process of distributed decision-making while modeling the participatory democracy and the value of a civil society.

It can be said that the only real failures are failures of the imagination. If our Ukrainian colleagues could imagine a different future, a different educational model, and a different financial model, they could work toward achieving it. Poland presented such a model. Grounded in CEE values and culture, the four Polish partner universities had already successfully made these changes; international accreditation groups accredited their programs, and their graduates were in demand by employers. Since Polish conditions were much closer to Ukrainian conditions than American conditions, Poland became an attainable model to which the Ukrainians could aspire. Mentoring partnerships between Ukrainian and Polish universities helped Ukrainian faculty envision how their institutions and programs could be changed. The strategies Poland had used to deal with their Ministry of Education and win support for new business programs were models for Ukrainian faculty. Study tours for faculty and administrators to Poland and the United States helped Ukrainians see first-hand how undergraduate and graduate business programs were designed and implemented. During these exchanges, they met with faculty and students, attended professional conferences, procured additional Western texts, familiarized themselves with professional journals, and explored different financing options.

Partnerships with business and industry were also important because as Ukrainian faculty began to consult with Ukrainian businesses and present executive training, these businesses began to send their high-potential managers to MBA and PDS programs. Business also looked to the graduates of these programs for their new hires. Their ties to business provided new income streams for both faculty and academic institutions, paving the way for continuing education and executive education programs. Another indication of successfully building social capital was establishing six Regional Advisory Councils to continue fostering cooperation between education and businesses in six oblasts in Ukraine (Kyiv, Lviv, Odessa, Donetsk, Dnipropetrovsk, and Kharkiv).

Finally, there was an urgent need to establish trust and institutional support for the Ukrainian educational organizations that were reforming higher business education. Two network organizations facilitating the reform movement – CEUME and the Ukrainian Association for Management Development and Business Education (UAMDBE). They were established at the end of the first project in 2002. Appropriate actions were taken to formalize the network of CEUME offices into a non-governmental organization – CEUME NGO – to build ongoing sustainability. This organization, carrying out the original Consortium mission, became a partner of the Centre for Nations in Transition in designing and delivering the BMEU project in 2002. UAMDBE is continuing the reform movement initiated by the *Blueprint* and led in introduction of new educational standards and an independent accreditation system for business management education. Thanks to those investments, internal capacity was created to support the educational reform movement initiated by the project. In this way, future educational needs will be continually monitored and the CEUME NGO and Association services adapted to changing needs and conditions.

6.7 Making It Happen: Introducing New Pedagogies

> *re-invention brings into focus a different view of adoption behavior: instead of simply accepting or rejecting an innovation as a fixed idea, potential adopters on many occasions are active participants in the adoption and diffusion process, struggling to give their own unique meaning to the innovation as it is applied in their local context. Adoption of an innovation is thus a process of social construction (Rogers, p. 179).*

The approach taken in developing successful training pedagogy was to engage the faculty in experiencing the same kind of learning strategies we were asking them to use with their students. Trainers demonstrated and modeled the teaching strategies they wanted faculty to adopt, and only afterwards unpacked not only "what" they learned, but also "how" they learned it. By actively engaging faculty in the process of participatory learning, they experienced first-hand how important the learning methods were to conveying the content and skills their student would be expected to learn.

The training also included pedagogy courses that provided faculty with opportunities to practice and engage in a variety of interactive teaching techniques such as case studies, role plays, and simulations. These courses gave them an opportunity to become skilled in using these new methods and provided theoretical background and justification for interdisciplinary, interactive teaching, and gave them tools for teaching students to become proactive problem-solvers and effective communicators.

Because, the workshops designed to prepare Ukrainian faculty were inherently "intercultural" as well as transformational with regard to content and the process, the adaptation of materials and activities required the addition of techniques and principles inherent in an internationalized curriculum. *Internationalizing*

curriculum has been defined as an intentional and *transformational* approach to teaching and learning which involves reflective practice, surfacing tacit knowledge, comparative thinking, performance-oriented design (See Wiggens & McTigh, 1998.), and the infusion of global perspectives into course goals as well as the scope and sequencing of content (Smith & Mikelonis, in press).

Navigating this tricky rhetorical landscape involved carefully structuring information and experience that both explicated and modeled the process of Western-based business education. It required that faculty be allowed first to recognize the processes and assumptions of the existing educational, political, and economic systems and then to identify the theories, information, and methods inherent in the new system they were creating. Recognizing the differences and disparities forced them to make informed choices about what reforms to institute in their own classrooms. It was this inductive approach that helped them "take ownership" of both the process and the content we were proposing and adapt them to the Ukrainian educational system (Mikelonis, 2002).

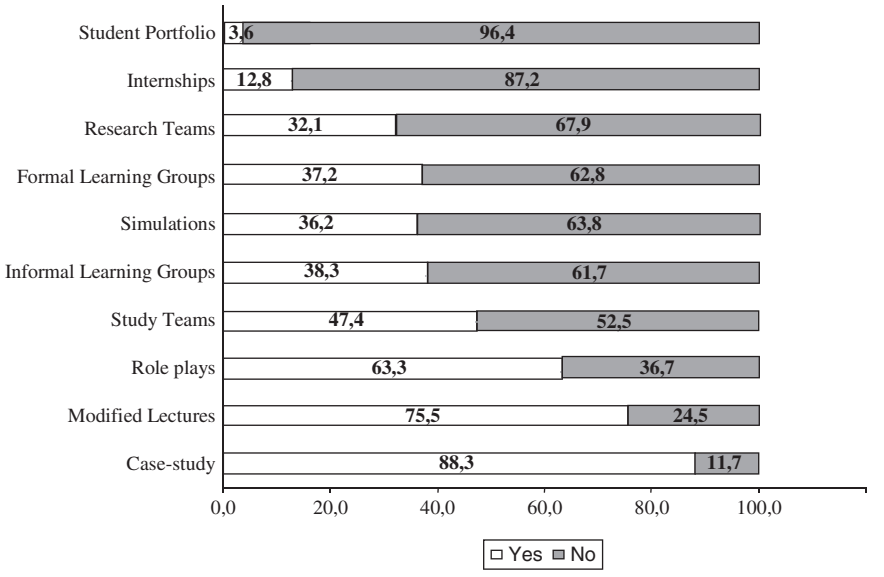
Training faculty to develop business education courses at the undergraduate and graduate levels also involved helping them to change their perception of their faculty roles as experts, who had all the right answers, to becoming co-learners, who worked with students to discover viable solutions to contemporary business problems. It involved convincing faculty that they needed to learn more about actual business practice by consulting with business and industry professionals or working themselves part-time in business. It required them to play an active role in teaching and learning, shifting their paradigms about teaching, and their roles as university professors. The junior and mid-career faculty were most amenable to this training. They found the proposed changes easiest to make. They were excited about the new curriculum and teaching methods and were enthusiastic about the opportunities they presented.

Transforming their pedagogical practices required self-reflection and personal transformation on the part of faculty. It was necessary to carefully guide the process as faculty encountered, analyzed, and manipulated Western business theories and pedagogical processes. Rather than trainers presenting themselves as experts who were going to tell them what to do and how to act, they needed to help faculty understand what we had to offer, but recognize that these were not definitive answers about how they would or could use our expertise. It was faculty's job to *re-invent* the innovations presented and adapt them to Ukrainian conditions. We were simply guides in that process, setting the conditions for learning.

6.8 Results of Enhancing Business Education in Ukraine

Absolutely all internal programs, new content, and partners were a result of CEUME. We even got approval by the Ministry for many of the departmental changes, and the Ministry pays for them—even the Marketing Department. The PDS program is attributable to CEUME. About 80 teachers have passed through CEUME out of 408 faculty, or 20%.

Table 6.2 Teaching methods used by management faculty in 2005 ($n = 195$)



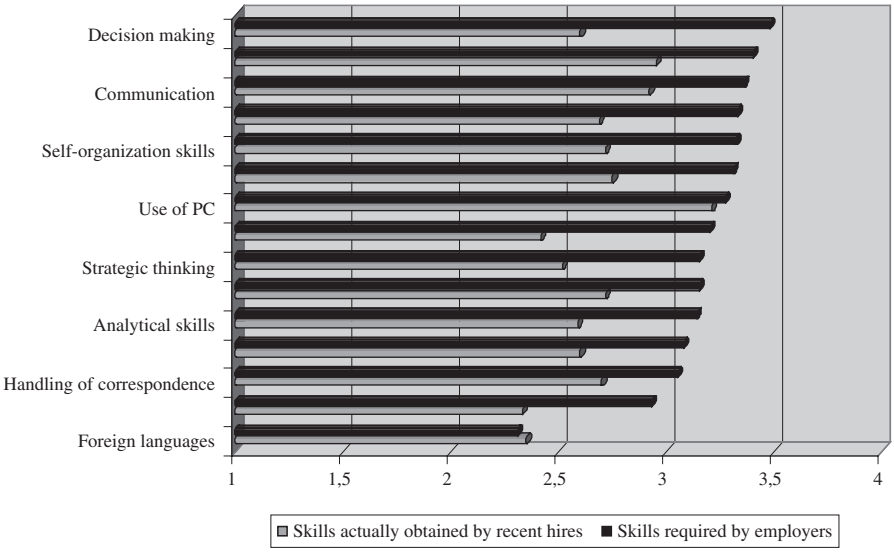
> *We have a number of 30-40 year-old trainees who are teaching new courses which are offered as the last year of the bachelor's program and as part of the new masters curriculum. Everyone now wants to study foreign languages, particularly English and French. . . . (Nazarova, Galina. Personal communication in "Re-inventing the academy in Ukraine," November, 2001.)* .[12]

As a result of the second project, BMEU, faculty and administrators demonstrated a paradigm shift with regard to curriculum reform, use of new teaching methods, the introduction of new courses and materials, administrative initiatives, and a spirit of cooperation between business and academic institutions. Table 6.2 indicates the scope of the implementation of new interactive teaching methods that have significantly improved the effectiveness of the learning process, built new skills among faculty and graduates, and made the curricula more practical through the institution of widespread use of case studies.

Administrators now possessed an increased understanding of the goals and key components of general business education, MBA, and PDS programs, and were, as a result, more supportive of their faculty's efforts to improve programs. Table 6.3 shows the improvement of academia's response to the business community's needs since CEUME's 1999 research.

[12] Galina Nazarova was the Pro-rector of the Kharkiv Economics and Technical University in Kharkiv. Her institution was particularly successful in making curricular, administrative, and physical (new buildings) changes that radically transformed the institution. Funding for these changes came largely from outside donors.

Table 6.3 Skills required by employers vs. skills actually obtained by recent hires



Source: Business management education in Ukraine: progress dynamics (2005).

Faculty recognized the need to continually increase their business knowledge and skills in teaching, research, and consulting (see Table 6.4). They discovered new models for field research, often sponsored by local business. They also began applying their new knowledge in helping students and businesses launch new enterprises and contribute to the success of existing businesses.

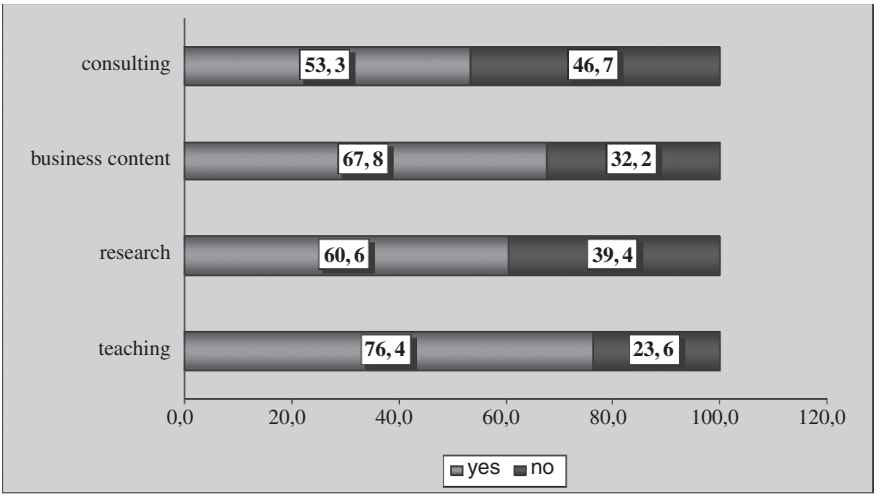
Over 260 events (seminars, national conferences, regional roundtable discussions, summer institutes, weekend workshops, internships, study tours, etc.) provided information and training to over 4600 participants. All 26 participating institutions spanning six regions across Ukraine prepared both strategic plans and action plans. The BMEU partnering institutions launched:

- twenty baccalaureate business programs, providing evidence of progress in terms of structure, quality, and delivery;
- five new MBA programs; and
- five new PDS programs awarding PDS certificates in specialized business training.

These programs introduced new student services, such as Internship Programs, Placement Offices, and Alumni Offices. Moreover, these programs demonstrated improved relations and cooperation with business.

Significant progress was made in creating "critical mass" (10–15 well-trained faculty) in each of the six regions to continue to launch new MBA programs cooperatively, especially in smaller institutions that did not have enough faculty to initiate their own programs. The growing cooperation *between* institutions was a new phenomenon in Ukraine. Significant progress was also made in

Table 6.4 Improvement of key activity areas by management faculty in 2005 ($n = 198$)



Source: Business management education in Ukraine: progress dynamics (2005).

creating "critical mass" of well-trained faculty for baccalaureate programs within the 26 participating institutions.

In March 2004, UAMDBE adopted a set of national business education standards and outlined accreditation processes consistent with recognized international accreditation systems. These standards were created in cooperation with Ukrainian academic and business communities, BMEU, and foreign experts. While the Ministry of Education and Science's standards provide minimum requirements for Ukrainian certification, these independent standards and accreditation processes are designed to guide the development of quality business programs and to measure their performance by international European and American accreditation standards. To date, more than 50 Ukrainian universities have joined UAMDBE and are now paying membership fees to provide the resources needed for institutional sustainability. Likewise, six Regional Advisory Councils were established to help foster cooperation among educational institutions and businesses in six oblasts of Ukraine (Kyiv, Lviv, Odesa, Donetsk, Dnipropetrovsk, and Kharkiv).

Five Ukrainian educational institutions also formalized new partnerships with foreign universities: "KROK," a Kyiv private university, and Dnipropetrovsk University of Economics and Law developed a partnership with the Higher School of Business in Nowy Sacz/National Luis University. Kherson State Technical University and Odesa State Economics University developed partnerships with the University of Warmia and Mazury, and the Dnipropetrovsk Mining Academy established a working partnership with the Higher Banking School in Wroclaw. Many other partnerships are currently being negotiated.

Ukrainian faculty gained increased access to modern business textbooks and other resources through their institutional libraries (which our programs provided), the CEUME Regional Resource Centers, and the Internet. Approximately 9500 textbooks were donated to institutional libraries and over 85 titles were added to each of the CEUME Regional Resource Centers to increase their holding by the BMEU project. The Online Resource Center found at www.management.org.ua contains research and methodological materials in business disciplines, teaching notes on business cases, international conference findings, and other information. Three sets of case study books and teaching notes were published on Management, Marketing, and Finance, which have been approved by the Ministry for use in Ukrainian classrooms as a result of the CEUME project, and four additional case study competitions were conducted by BMEU. These new case study books have since been published and are available to Ukrainian academics.

Finally, the professional journal, *Synergy*, and the newsletter "Reporter," have been published and distributed on a quarterly basis for the past four years. They provide modern management information and up-to-date reports on trends in business education, while creating publishing opportunities for Ukrainian faculty.

The results of the CEUME and BMEU projects are largely attributable to our practical experience in instituting similar programs in Poland, Bulgaria, Hungary, Romania, and Slovakia from 1992–1998 and to our reliance on the basic tenets in Everett Rogers seminal work on *The Diffusion of Innovations (4th Ed., 1995)*. Partnering with the Polish institutions who had already successfully introduced these academic innovations provided us with a "jump start" to the process because they became ready models that convinced the Ukrainians that such radical changes in traditionally hide-bound academic institutions were not only possible but also could be accomplished in a relatively short period of time. The work in Ukraine had an unanticipated but very positive side effect: the Polish partner institutions assumed the important role of continuing to mentor their Ukrainian partners and virtually took over the goals of the project from the Americans. They now see themselves as continuing the developer role, thereby improving the sustainability of educational reforms in Ukraine. The projects themselves are testimonials to the happy marriage between theory and practice; the participants have re-invent the innovations introduced and adapt them to local conditions, thereby reconstructing their realities and their higher educational systems.

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Chapter 7
Personal Mastery in Management Education

A Case Description of a Personal Development Trajectory in Graduate Education

Peter Berends, Ursula Glunk and Julia Wüster

7.1 Introduction

In his book "Managers, not MBAs", Mintzberg (2005) called for a two-sided management education that emphasizes personal development in addition to traditional cognitive training. The reasoning is simple: Managers operate in a social context where *who* they are matters as much as *what* they do. Traditional management education focuses on the technical aspects, the "what" side of management. Paying attention to the "who" side of management requires a shift in mental models by accepting the relevance of subjective realities, personal values and social complexities. Senge (1990) introduced the term personal mastery to describe the discipline of continuous value-guided learning. The goal of personal mastery is to create a deeper level of self-awareness and authenticity, which in consequence leads to wiser choices.

So far, management education has left the personal domain of managerial effectiveness underexposed. This is all the more astonishing as Business Schools can provide a safe learning and experimentation context to develop personal mastery early on among future managers. Given the potential impact of their students on organisations and society at large, we even argue that Business Schools have a moral responsibility to develop and cultivate managerial self-awareness and wisdom (cf. Ghoshal, 2005).

The aim of the chapter is to describe the case of a Business School that introduced a personal development trajectory in its graduate program of management. We will elaborate on the guiding principles and set-up of this trajectory in order to stimulate the discussion about possible formats among schools. The chapter reports some preliminary findings, which are meant to give a first flavour of effects. We expect that the chapter will be most inspiring for management educators who are thinking about incorporating the cultivation of wisdom in their curriculum. The structure of this chapter is as follows. First, we elaborate on the growing relevance of a personal mastery in business. Second,

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we review the foundations of developing personal mastery and describe the guiding principles, goals and set-up of our trajectory, which is based on these foundations. Thereafter, we will report preliminary results of this trajectory on graduate students, reflect on comparable approaches and discuss implications.

7.2 Growing Relevance of Personal Mastery

New technologies, demographic shifts, deregulation and globalisation have changed our societal structures (Friga, Bettis, & Sullivan, 2003). We are said to live in a knowledge era where life long learning is a key (Garvey & Williamson, 2002; Marquardt, 1996). While in the past only musicians and religious leaders saw the need to learn throughout life (Drucker, 2005), most of us today face the requirement to keep abreast of changes and thus see the need to learn. Society does not anymore provide a stable framework for life and work (Higgins & Kram, 2001; Jashapara, 2004). Lacking generally accepted directions, we have to define what we stand for, which values we endorse, what we want to do and who we want to be. Personal mastery greatly supports the development of these capacities.

Organisations try to accommodate these societal changes. Learning-oriented ideals have been promoted using labels such as the Learning Organisation (Senge, 1990), the Living Organisation or the Wisdom Organisation (Barker & Camarata, 1998; Kezar, 2005; Marquardt, 1996). Creativity, intuition, interpersonal skills, and emotional intelligence are emphasized to increase organisational learning. Gosling and Mintzberg (2003) argue that a manager needs to have five mindsets, which are sandwiched between the reflective mindset, to manage the self, and the action mindset, to manage change. It is this reflective mindset that will distinguish good managers from their colleagues.

New leadership notions emerge that stress authenticity, self-awareness and self-regulation (Gardner, Avolio, Luthans, May, & Walumbwa, 2005; Whetstone, 2002). Coaching is emphasized when thinking about managers' supervisory roles (Manikutty, 2005). This means a clear move away from the traditional control orientation (Ellinger & Bostrom, 1999). Leadership in this sense is grounded in a fundamentally new understanding of how the world works (Jaworski, 1998). Self-awareness refers to the insightful understanding of our emotions, strengths, weaknesses, needs, and drives. This is achieved by observing our own behaviour and the feelings we experience while acting. This results in a clearer picture of who we are and what we value (Goleman, 1998; Robak, Ward & Ostolaza, 2006). Self regulation is internalized balancing of our actions and emotions through reflection and mindfulness. This leads to the ability to control our own effort during the development process resulting in integrity (DuBrin, 2004).

These developments in organisation and leadership notions inspired us to pay more attention to the person of the manager in our business curriculum. Below, we will describe the fundaments as well as the practical design of our personal development trajectory.

7.3 Foundations for Developing Personal Mastery

Maslow (1968) distinguishes two sets of wisdom in each human being: one set clings to safety, conformity and defensiveness (defensive wisdom). The other set of wisdom impels toward growth and wholeness of the unique self (growth wisdom). In order to grow, the individual needs the courage to look at current reality without the veils of illusion and defensiveness. The idea is to become aware of the conflicts between inner values and actual behaviour governed by defensive assumptions. Here, commitment to the truth comes into play and the necessity to challenge our mental models. Often, people fear to face the truth because of the consequences of knowing (Maslow, 1968).

Most approaches that aim to facilitate the development of personal mastery build on ideas of Humanistic Psychology, represented by authors like Maslow (1968) or Rogers (1969). We can distinguish three general approaches: coaching, intervision groups (mutual learning groups) and solitary reflection. Coaching provides the possibility for reflection, through constructive feedback so that consciousness about causes and effects of action is enhanced (Kets de Vries, 2005; Locher & Luijten, 2004). There are two relevant coaching principles concerning the client: first, the client needs to enter into this relationship voluntarily and the development of trust is of utmost importance (Colombo & Werther Jr., 2003). Second, the ontic-development of the individual, namely experiencing change, needs a certain level of maturity (Laske, 1999). The coaching relationship is crucial for fostering growth. This designed alliance is built on trust, confidentiality, veracity, and spaciousness (Whitworth, Kimsey-House & Sandahl, 2003). The coach is at the service of his/her client: actively listening, empowering and stimulating action and deepening learning. In terms of attitude, he/she is inspired by desire less awareness, self-acceptance and acceptance of the other (Maslow, 1968). The general goal of coaching is to develop a cognitive – emotionally and behaviourally more flexible individual with increased self-awareness, living in line with his/her values un-frightened by the unknown (Laske, 1999; Maslow, 1968). More specifically, Wales (2002) identified an "inner and outer model of development" that shows the benefits of coaching. In a study among managers, Wales found several positive effects. Individuals developed more self-awareness, manifested through past–present awareness, openness to feelings, reflection, choice, and confidence.

Intervision is a concept interrelated with coaching. Here, coaching takes place in a peer-to-peer setting. Others might ask important questions and bring in new perspectives (Geiselhart, 2001; Kets de Vries, 2005). This is usually facilitated by group dialogue, which can be described as collective inquiry into the underlying assumptions and shared mental models (Isaacs, 2001). Furthermore, the individual can learn by receiving feedback from the other group members (Shipper & Davy, 2004). The consequences are the same as identified earlier, namely self-awareness, professional identity, personal values, and identification of developmental needs (Higgins & Kram, 2001). Story

telling also provides a great opportunity for self development. Not only does the narrator rediscover himself and his identity, but also the listeners may have a powerful learning experience (Kets de Vries, 2005). Narratives in peer to peer setting provide the opportunity to rehearse the most important aspects of life, and experimenting with letting go of the mask a person usually holds between his/her true self and the image he/she wants to maintain in front of others (Quick & Macik Frey, 2004). Here also the quality of the relationship influences the outcome (Higgins & Kram, 2001; Ragins, Cotton & Miller, 2002). Special attention needs to be devoted to creating a space of psychological safety. Structured learning circles (e.g. team coaching, mutual learning groups) help individuals to reflect on actions and underlying mental models (Kets de Vries, 2005). In this process, people are becoming aware of their own ignorance, incompetence, and growth areas (Senge, 1990). The idea behind the process is that learning can only be realized when the individual sees the differences between personal values and current reality (Schein, Kahane, & Scharmer, 2001).

All approaches mentioned so far are based on social facilitation. Next to that, personal mastery can also be stimulated by solitary reflection or incubation time. Reflecting means refolding, which describes that attention needs to be focused on the inward to then turn outward, with the intention to experience familiar things in a different way (Mintzberg, 2005). The goal is to create "reflective openness", where the individual challenges his/her own thinking by identifying the assumptions that lie behind certain believes and behaviours (Flood, 2003) and then observe these assumptions when they start influencing one's own behaviour. The practice of contemplation or meditation can largely enhance these processes. Another tool for self-reflection is autobiographical work, where the person writes his/her own story in a journal or diary (Gardner et al., 2005).

7.4 Guiding Principles and Goals of our Personal Mastery Trajectory

The trajectory presented here aims to develop students' personal mastery through a mix of coaching, intervision and reflection time and is based on the foundations mentioned above. In this trajectory, we specifically deal with emotions, attitudes and assumptions. We try to reach a stage that Buddhists would call "mindfulness". This is a state of awareness of a person's own assumptions, concepts and behaviours while at the same moment feeling compassion with oneself and the other. To develop this attitude, we specifically focus on assumptions that people hold and where they come from. This asks for a coaching attitude where facilitation of the process, the ability to mirror behaviour and knowledge about personal dynamics are important parameters. Figure 7.1 pictures the overall model of our approach to personal mastery in management education.

We strongly believe that the path to awareness of self and of others first goes through self acceptance and than through acceptance of the other person. The famous biblical saying "Love thy neighbour as thy loves thyself" works in two

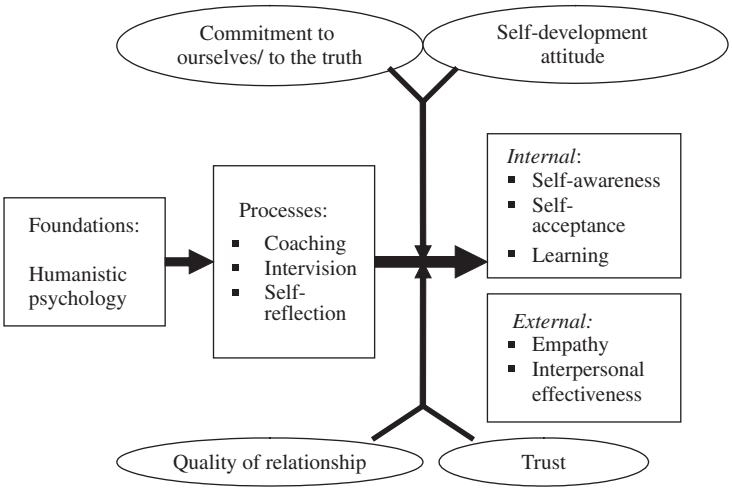

Fig. 7.1 Overview of the set-up of the coaching trajectory

directions: You cannot love the other more than you love yourself. If we define love as total acceptance than the reader understands our point[1]. All assignments and exercises should be seen in this light. Very often, we encounter trainers and coaches who "want to delve deep" and "confront the clients with themselves" or alternatively, favour "structured feedback rounds" where the participants have to wrap a negative message in a positive statement. Participants have the idea that they worked really hard in these programs if the feedback they received was really "personal and direct". Often this leads to the idea that they "have to work harder on themselves" towards a utopian ideal personality. The result is that these people come to accept this model of "working on yourself" as a model with which they can approach other people as well. We choose to take a different attitude in this trajectory.

The trajectory aims at developing students in what Mintzberg (2005) calls "The Art and Craft of Management." In this trajectory, students will develop themselves in three sub-disciplines:

1. Self-awareness: Exercises and assignments will be offered that are aimed at discovering personal values, strengths and weaknesses, and how one is perceived by others. The following questions guide this part:
   - What is important to me?
   - How can I see current reality more clearly?
   - How do I contribute to my own problems?

[1] We realize that defining 'love' probably is the domain of poets. However, we think we approach a workable definition with 'accepting' as 'love stripped from its romantic connotations'. Acceptance is seen here as an active process -as opposed to its passive sibling 'tolerance'.

2. Personal development: Students will practice with a competence they want to improve. The aim is to get insights into one's own developmental needs and then work on them continuously. The leading question is:
   - How can I expand the ability to realize what I truly desire?
3. Coaching attitude: Developing students' coaching and learning capacities is a major aim of this trajectory. For this reason, students support each other while working on personal objectives. Through training, students will learn how to support the development of themselves and others. The leading question is:
   - How can we support the development of ourselves and others?

The term discipline is used deliberately to underline the fact that your development in these areas will not be completed after the last meeting. This trajectory intends to be the start of a journey of continuous development.

7.5 Set-Up of the Trajectory

The trajectory starts with an introductory lecture to provide interested students with the possibility to learn more about this trajectory and to ask questions. Then each student can decide whether he/she wants to participate, since the voluntary basis is important. To guarantee optimal group effectiveness, a maximum of six master students gets assigned to one group. Nine group meetings of three hours each are spread over a period of 8 months. The group meetings are guided by experienced coaches. Before the first meeting, each student writes a letter of commitment to show his/her willingness and loyalty to follow the trajectory. From then onwards, students read background literature, prepare exercises inside and outside of the classroom, and reflect on them in the group dialogue or during their self-reflection time. Especially for the latter the requirement is to keep a journal applied. At the end of the trajectory, each student is required to hand in a learning report that reflects upon his/her own development and on general insights gained. Appendix A, provides a short outline of each session.

7.6 Preliminary Evaluation

During the pilot year (2005/2006), 23 students of our Master of Science Program in International Business took part in the trajectory. We conducted an evaluation mid way the trajectory. We asked students to react on four questions. We asked them (1) to reflect on their learning process; (2) to reflect on the group process; (3) to reflect on the functioning of the coaches; and (4) to reflect on the study material. We explicitly did not ask to rate themselves on the

specific goals they had formulated. This leaves room for the students to raise the points they wanted to raise. Nineteen of the 23 participating students reacted. Two questionnaires were filled out in a way we could not process (answered "ok" on all questions).

Concerning their learning process, 15 students reported that they notably increased their self-awareness concerning their behaviour, governing principles and effects. Students also reported to be better able to understand positions of other people. Three students reported that they felt they had become more open and one of them noticed other people reacting more positively towards him/her. Three students also appreciated that their commitment to this trajectory "forced" them to reflect more on their own values and behaviour.

Students were all very positive on the group process. Eight participants specifically commented on the trust and the level of openness. Four students ascribed the initial high feeling of trust and openness to the first session where we asked them to talk about the critical events in their lives. Two students (from small $n = 4$ groups) noted that the size was conductive to the process, while two other students (from group size $n = 7$) commented that a smaller group size would be desirable. Two students also commented on the lack of commitment of some of the participants (one quit and one person showing up irregularly).

As for the role of the coaches, all students reacted positively. Items specifically mentioned were the ability to listen ($n = 8$), the ability to probe ($n = 9$) and perceived openness ($n = 3$). Four students noted that the coaches were professional and caring. Three students reported that they perceived the coaches as enthusiastic.

All in all, it seems that the trajectory delivers what it was designed for: creating more awareness of self and the other. Of course the results are preliminary, given the small number of participants and the lack of longitudinal results and comparative data. In the future, we hope to collect more systematic data on the effects of participants' engagement in this trajectory and compare them with results of comparable initiatives.

7.7 Comparable Initiatives

How does our trajectory compare to other like-minded initiatives? We choose to look at two different approaches that also aim at the development of students beyond disciplinary knowledge and skills. We looked at the PDP (personal development program, cf. Edwards, 2005) program in the UK and at the idea of professional communities (cf. Astin, 1984/1999) in the US. Both projects have comparable characteristics, but differ in scope and approach. The PDP initiative tries to develop students to become intrinsically motivated learners by specifically taking up reflection skills in all the courses in the curriculum. The program develops "learners". The professional community programs (US) aim at embedding the school environment more in its social surroundings by involving

Table 7.1 Different personal development programs compared

	Our program	PDP	Professional communities
Focus	Individual growth	Effective learning	Mutual co-operation
Place in curriculum	Next to curriculum	Integrated in curriculum	Design of the school
Goal	Personal masters	Aware learners	Responsible citizens

parents in the school but also by making students more aware of their later roles in society. This program aims at developing responsible citizens. Table 7.1 gives a summary of our trajectory compared to the two other programs.

7.8 Discussion and Conclusion

This chapter described a personal mastery trajectory in management education. We shared our conviction that it is necessary to complement knowledge and skills offered in management education with ways to develop personal mastery among these managers to be. Although we feel strongly for our chosen approach, several questions can be raised: should we embark on these highly personal trajectories as business schools? What are the potential negative side effects of such a program?

As for the responsibility issue: should we as Business Schools engage students in these kind of highly personal trajectories? Some may say that Business Schools are mainly responsible for the cognitive development of students. However, management students leave school at still younger ages. Employers complain about the naiveté of students, their lack of social understanding. They report that students "collapse", once confronted with the complexity of current business life. Educational institutions have a task in preparing students for the dilemmas and paradoxes of the business world, in a way that cannot be learned from books alone. Furthermore, Business Schools are educational institutions. Education means facilitating the development of people (educare = to raise; from: educare = to bring out; educare = to lead). This means that in addition to offering knowledge and developing skills, we have a responsibility to help bringing out the inner being of our future managers, which provides them with an inner compass when dealing with the less rational and predictable sides of business life.

What are potential negative side effects? Students might not like what they find out about themselves. They might quit the course or worse, quit the school. In our – be it young – experience, however, students react in an overwhelmingly enthusiastic way. Maybe we are dealing with a self-selection bias here: students who took part in the trajectory were already interested in personal development (though this can be countered by the initial surprise students showed when they discovered the emotional depth with which they had to deal with).

All in all, we think that we have embarked on a necessary journey with our student that prepares them for the complexity of business life by developing their personal leadership capacities and therefore their positive impact on others. We hope that our trajectory stimulated students to develop a habit of engaging in reflective conversations with themselves and others so that they can enjoy a more meaningful life, privately and professionally. Furthermore, we hope that this chapter sparks interest to our colleagues to ignite similar initiatives. We could then start to build a knowledge base on educational approaches to developing personal mastery. Researchers could follow participants in various personal development programmes and investigate their effectiveness in developing a reflective mindset (Gosling & Mintzberg, 2003), authenticity, self-awareness, self-regulation (Gardner et al., 2005; Whetstone, 2002), and managerial wisdom (Goshal, 2005). We hope that our chapter provides a first step to initiate a more systematic comparison of various personal development initiatives in management education and their effects.

"Knowing others is intelligence; knowing yourself is true wisdom" – Lao Tse

Appendix 1: Overview of Sessions

Session1: Who Are We and What Matters to Us?

In this session, we focus on the question what really matters to us. Moreover, we will speak about how to define personal objectives for your self-development trajectory and the role of the journal. We all know that how we are today is partly a function of what 'events' happened to us.

Objective: Building trust, creating awareness of what matters to us, who we are and who we want to be.

Session 2: Coaching Skills and Personal Objectives

In this session, you will become familiar with fundamental coaching skills, which we need for our self-development trajectories. Moreover, each student will introduce his/her personal objective(s). Participants will support each other by discussing the definition of objectives, by thinking together about relevant assignments, by assisting each other in doing the assignments (outside class) and by giving feedback. During the meeting, participants will develop a monitoring plan: a routine for regular reflection on their progress.

Objective: Start working on a personally meaningful goal, develop coaching attitude.

Session 3: Reflection upon Own Assignment

This is the first session in which you report back your findings of the challenge you set yourself.

Objective: Self-reflection, learning from others.

Session 4: Balance and Personal Qualities

What we see in others says a great deal about ourselves.

Objective: Self-reflection, learning from others.

Session 5: Reflection upon Own Assignment: Vision – Person Congruence

In this session, we will discuss the link between your personal assignment and your vision.

Objective: Link the personal goal to a bigger purpose.

Session 6: Awareness of Assumptions

What we say and what we think is not always congruent, especially in difficult situations. However, what we think and do not say reveals a lot of our hidden assumptions. Working with the method developed by Chris Argyris and Donald Schön, we will delve into uncovering yet more of your hidden assumptions.

Objective: Discovering big assumptions that govern our behaviour.

Session 7: Awareness of Assumptions II

Here we try to arrive at a behavioural footprint: a set of assumptions about who you are and what your role is in different settings. Your behavioural footprint serves as your biggest selection filter.

Objective: Discovering big assumptions that govern our behaviour and that are often not in line with our values.

Session 8: Inner Journey to your Future Self

Guided meditation

Objective: Discovering our essence, as a powerful inner compass.

Session 9: Wrap up: Personal Road Maps

In this last session, we will dedicate time to what has been learned and how to continue from here. Reflect on your development over the last year and your envisioned pathway into the future. We will evaluate the programme here as well.

Objective: Outline your path into the future.

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Chapter 8
Innovations in Graduate Business Education: The Challenge of Developing Principle-Centered Leaders

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> As much as at any other time in history, our post-Enron world demands a connection between leadership and character and between leadership and ethics.
>
> — *Kolp and Rea* (2006, *p. 26*)

8.1 Introduction

Some readers may believe that the corruption scandal at Enron was a statement about American business, spurred on by the greed of powerful corporate bosses in a powerful and controversial capitalistic nation and society. It was not. Well, it was, but it was more than that. What happened at Enron was not a statement about "American" business; it was a statement about business. It was not a statement about "American" greed; it was a statement about greed itself. The events at Enron could have happened anywhere in the world. Indeed, similar corruption scandals have occurred at Parmalat in Italy, ABB in Sweden, and Snow Brands Food in Japan, just to name a few. And just as many different nations share this common problem, they also share a common solution – to develop better leaders. Leaders with character. Leaders with principle. Leaders with integrity. Leaders who give more than lip service to the people who work for them and depend upon them for their livelihoods, the shareholders and stakeholders within the larger society.

Many people seem to think that all we need to address this problem is more legislation designed to protect stakeholders. But lack of regulation did not cause the problem, and more regulation will not solve it. Further, unprincipled people can always find ways to circumvent legislation [1].

[1] For example (cf. Bandsuch, et al. 2008), the Sarbanes-Oxley Act (2002) in the United States, or the OECD Principles of Corporate Governance (2004) that is widely accepted throughout most of the world, or similar legislation in other countries. The Organization for Economic Co-Operation and Development was organized in 1960 to promote sound economic

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This chapter is about the innovations in graduate business education and development that we believe can help create leaders who rely on something deeper than external regulations to guide their choices. While Enron's demise is now 6 years old, it will forever underscore the main point of this chapter – that our world desperately needs more principle-centered leaders. When the Enron trial concluded, ex-Enron executives Kenneth Lay and Jeffrey Skilling were found guilty on 29 criminal counts and were sentenced to prison; thousands of people were financially devastated; Enron no longer existed; and Lay suddenly died of a heart attack. Beyond the very quantifiable costs associated with the unprincipled behavior of Lay and Skilling, there are even greater untold costs to the public trust. When people lose faith in corporate leadership, the premise and purpose of the free enterprise system are undermined (Bansuch, Pate, & Thies, 2008).

Concern about the quality of leadership in businesses and industry is, of course, not new. Consider the following remarks, now nearly 20 years old, by leadership guru and former university president, Warren Bennis:

The business world is turbulent, its waters roiled by scandals and a recent stock market crash. The political world is in upheaval, rocked by secret arms deals with terrorists and concessions to foreign despots who deal in drugs and have only contempt for the concept of human rights. The very fabric of our society is being unraveled by unchecked crime and drug traffic, increasing poverty and illiteracy, and unprecedented cynicism toward possible solutions. Who's in charge here? The answer seems to be, no one (Bennis, 1989, p. xii).

The people who happen to be in charge of businesses and corporations are not necessarily what we would call leaders. Noted leadership scholar and Harvard Business School professor John Kotter made the following observation:

> . . .I am completely convinced that most organizations today lack the leadership they need. And the shortfall is often large. I'm not talking about a deficit of 10% but of 200%, 400%, or more in positions up and down the hierarchy (1999, p. 1).

Clearly, there is a need for finding better ways of developing leadership talent.

In short, the purpose of this chapter is to examine the role of graduate business education in developing principle-centered leaders. First, we discuss what we mean by principle-centered leadership and why it is so essential in the world today. Then we discuss traditional approaches to graduate business education, along with recent criticisms aimed at graduate business schools.

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development, financial stability and world trade. The original member countries were Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. The following countries joined subsequently: Japan, Finland, Australia, New Zealand, Mexico, the Czech Republic, Hungary, Poland, Korea, and the Slovak Republic.

Next, we discuss innovations being made in the graduate curriculum at several colleges and universities that focus on leadership development. Finally, we consider challenges that may make these innovative approaches difficult to adopt and specific implications of these approaches for graduate business education around the world.

8.2 Principle-Centered Leadership

Don't all leaders, even corrupt ones, make decisions and act based at least partially on broad principles? Yes, of course. But this chapter is concerned with ethical principles, as found in the writings of Kant and Mills (cf. Rawls, 1971).

Principle-centered leadership has been defined on the basis of (1) the quality of the leader's principles and (2) the leader's conviction in living by them (Covey, 1992). Principle-centered leaders believe in and are committed to a set of moral principles, and then remain true to those principles in their actions and decisions. This description mirrors Kohlberg's (1976) post-conventional level of personal moral development. Principle-centered leaders have identified and adopted a set of principles related to what they believe is fair and right and true. These leaders typically balance concern for individuals and for the common good. They do what they say they will do. Their behaviors and decisions are based on adherence to a core set of personal values that do not deviate as contexts change. This form of leadership includes and extends the concept of Level 5 leadership that Collins (2001) articulated in his prominent book *Good to Great*. According to Collins, the most effective leaders are characterized by personal humility and fierce determination for organizational success.

Principle-centered leadership is not acquired as a one-time result from a defining leadership moment. Rather it is developed over time as leaders demonstrate integrity to their principles in the face of numerous contexts and decision points. Followers perpetuate the leader's principles because the leader not only preaches the principles but lives them with unflinching consistency.

Examples of leaders who live by their principles abound. During Spain's Civil War, Nationalist leader Colonel Moscardo sacrificed his son rather than surrender the Alcazar of Toledo, which sheltered hundreds of civilians and served as a strategic and symbolic stronghold for Nationalist forces. Republican troops executed the young man after his father refused their demands. In 1990, *Omni* magazine editor Patrice Adcroft resigned in protest when publisher Bob Guccione insisted on placing a hologram of a Motorola phone on its cover, a move that she felt violated the usual division between editorial content and advertising. More recently, Whole Foods CEO John Mackey has committed to maintaining strict standards for selling seafood that has been fished responsibly.

Chris (2003) Lowney's book, *Heroic Leadership*, describes a collective group of principle-centered leaders. His treatment of the Jesuits and their leadership

development philosophies and practices has influenced our thinking about principle-centered leadership. Lowney asserts that there are four fundamental assumptions that differentiate the Jesuit leadership approach from conventional leadership approaches. They are (Lowney, 2003, pp. 15–21):

1. We are all leaders and we are leading all the time.
2. Leadership comes from within; it is about who we are as much as it is about what we do.
3. Leadership is a way of living, not isolated acts or roles we play.
4. Becoming a leader is an ongoing process of self-development.

From these assumptions we draw several conclusions. First, every person has the potential to become a principle-centered leader. Second, becoming a principle-centered leader is neither a quick nor a formulaic process. Third, and perhaps most importantly, principle-centered leadership is much more about heart and soul than about strategy and vision.

The need for principle-centered leaders is substantial. Beyond restoring societal trust in corporate executives, there are other reasons that augment the need for principled leadership. Consider the changing, more globalized and networked world that is making the leadership job more turbulent and difficult. There are also broader implications for critical decisions that impact people, the organization, and the larger society. Not only do leaders need to pay attention to a broader set of stakeholders, they must also recognize that public scrutiny can expose poor or unethical decisions in a rapid, global manner. In order to effectively lead in this environment, leaders need to understand themselves, the values driving their decisions, and the impact those decisions have on relevant stakeholders.

Imagine, for example, a company's decision to place a manufacturing facility in Vietnam. It might appear on the surface that the "obvious reason" for this decision was cost savings, but was that really the reason? What role do values play and how do values guide the decision? Is the decision based primarily on financial considerations – or greed – or is it based more on providing employment to people in a country that desperately needs jobs?

A principled leader understands his/her values and how they influence such decisions. Leadership decisions boil down to tradeoffs – between more and less profit, more and less recognition, short-term gains and long-term success, and one stakeholder's needs over another's. A principled leader will draw on his/her values to help make "right" decisions over "wrong" decisions. A person who has a good understanding of self is better equipped to lead and make decisions that are values-based. Such concerns about the quality and quantity of principle-centered leaders in corporate and other arenas raise the question: What responsibility do business schools have to solve this problem? This criticism is just one of many being leveled at graduate business programs as people around the world react to recent exposures of corporate wrongdoing. We submit that business schools have long been part of the problem (cf. Porter & McKibbin, 1988) and that, therefore, they must now become part of the solution.

Developing principle-centered leaders is a challenge that will require a strong combination of the best efforts from both educational and business organizations. In fact, Henry Mintzberg posits that both leadership education and the practice of leadership "are deeply troubled, but neither can be changed without changing the other" (2004, p. 1).

Of course, we recognize that a leader needs more than values to be successful. Self-understanding and good ethical principles will not guarantee success. A leader needs strong business knowledge and the competencies to apply that knowledge to set strategic direction, to align the organization to that direction, and to manage the change process. All business programs can do this, and most do it capably. The question is whether graduate business programs are doing enough to prepare leaders to use their knowledge to make sound business decisions that are also right and just and fair. Are business schools helping develop leaders of strong character and impeccable integrity?

Graduate business education has not yet evolved to meet this challenge. According to a recent news report published in *The New York Times*, "A survey of 91 business schools released in October [2005] by the World Resources Institute and the Aspen Institute found that 54% require a course in ethics, corporate social responsibility, sustainability or business and society, up from 34% in 2001" (Ellin, 2006, p. 22). However, simply adding a course to a traditional business curriculum without integrating ethical values and ethical decision making into the entire program will likely not lead to any substantive change.

We recognize that no matter what changes business schools make, some business people at all levels will still choose to act unethically. However, we also recognize that curriculum and program design changes in graduate business programs have the potential to substantially improve the development of principle-centered leadership in business students.

We argue that, along with corporations, business schools have a complementary, essential role to play in stimulating the development of principle-centered leaders. Graduate business programs can offer access to experts in diverse functional areas and a broad learning focus that corporate training programs typically cannot. Additionally, business schools can provide students a safe environment to explore leadership principles with professors and with their peers. Unfortunately, it is our experience, but not solely our own, that graduate business programs do a generally poor job of providing opportunities and effective approaches for leadership development. We believe this is particularly true in areas of leadership development related to character, values, and ethics.

Nonetheless, graduate business schools are not a lost cause as a vehicle for leadership development. Lowney's (2003) principles have provided us with a useful framework for thinking about necessary changes to graduate business education that will improve the development of principle-centered leaders. Before discussing those innovations, we will briefly describe traditional business

education approaches and identify some of their shortcomings related to leadership development.

8.3 Traditional Approaches to Business Education

Curriculum program design at most US colleges and universities is traditionally conducted by faculty committees with a composition of faculty representing each major business discipline. While this approach is participative and collegial, it places more emphasis on obtaining adequate course coverage in each discipline than on encouraging innovation in teaching or designing courses that stimulate student learning and more closely mirror managerial business activities. This approach can also lead to program decisions that place too much attention on what faculty members can teach or want to teach, and too little attention on what students need to learn in order to succeed in the work environment.

Another common activity in curriculum design at most US colleges and universities is *benchmarking*. Typically, benchmarking involves gathering comparative information on the variety of courses offered, admissions requirements, program structure, and program logistics from competitor institutions. While useful in curriculum design, this approach means that newly designed MBA programs are likely to perpetuate the flaws of existing ones.

A third program design issue is fitting courses within the typical academic structure of 15 or 16-week semesters. While many universities have begun to offer accelerated courses, many of them lasting fewer than 8 weeks in length and very few extend courses beyond a single semester. If leadership development truly is an ongoing process and not something that can be sufficiently or effectively taught (and learned) in a single semester, the academic structure may place too many constraints on the learning process.

Another problem with traditional graduate business programs is the manner in which content material is typically applied. Application in most courses is modular. For example, the student might be given a simple marketing problem, such as "apply marketing principles A and B to recommend what you would do." Most business problems, however, are never this simple. They usually require multidisciplinary analysis of how other functional areas and/or stakeholder groups might (and likely would) be affected. Additionally, students with limited managerial experience often do work that is seriously lacking in depth, quality, and substance. As a result, perhaps it is not too surprising that we find someone describing the traditional classroom experience as follows: "... the material passes from the notes of the teacher to the notes of the student without passing through the minds of either" (Author unknown).

Additionally, traditional approaches to business education focus far more on the content that students should learn than the kind of people they should become. Doctoral programs, for example, are designed primarily to generate

the next generation of professors. As such, doctoral programs emphasize developing subject matter experts in specific business disciplines. Business professors then spend most of their course time addressing the knowledge with which they are most comfortable – the academic content within their own disciplines. Graduates may readily cite what they learned about individual functional areas of business, but often have difficulty bringing all of that knowledge to bear on a single organizational problem. Additionally, many graduate business programs neglect or entirely ignore the "soft skills" (Mintzberg, 2004), which MBA graduates often cite as a concern. Mintzberg explains why he believes traditional graduate programs have struggled to effectively teach such skills:

> The soft skills simply do not fit in. Most professors do not care about them or cannot teach them, while most of the younger students are not ready to learn most of them. And few of these skills are compatible with the rest of the program – they get lost amid all the hard analysis and technique (2004, p. 41).

Beyond the minimal emphasis graduate education places on soft skills essential to effective leadership, most programs teach a set of concepts instead of teaching people. If we buy into Lowney's assertions that principle-centered leadership has much to do with who we are (character and values) and that leadership is a way of living instead of a role we play, then we conclude that most graduate business programs do not sufficiently help students improve their self-awareness and strengthen their character attributes. In fact, in conversations, we have had about graduate programs with business faculty at dozens of respected research universities, hardly any expressed a conviction that character development should play any role at all in an MBA program.

In short, traditional graduate business education approaches are poorly designed to develop principle-centered leaders and to actually teach leadership. Recent criticisms of MBA programs are abundant and compelling. Some specific examples may illustrate our point. Bennis and O'Toole, in their recent *Harvard Business Review* article, "How Business Schools Lost Their Way," assert that business schools are "ill equipped to wrangle with complex, unquantifiable issues the stuff of management" (2005, p. 96).

In his provocative book, *Managers not MBAs*, Henry Mintzberg (2004) argues that MBA programs have been admitting the "wrong people" and educating them in the "wrong ways." Mintzberg observes that most traditional MBA students have too little management experience to understand and interpret much of the material in their courses. This, in turn, limits the value they can receive from an education and the value they can add when they re-enter the workforce. He also believes that MBA courses focus too much on teaching students how to analyze business problems according to specific formulas. These formulas do not help students learn how to find and solve the more dynamic problems they are likely to encounter in the real world, especially when those problems require integrating knowledge from many different functional areas. One of his overarching points is perhaps the most compelling:

> It is time to recognize conventional MBA programs for what they are – or else to close them down. They are specialized training in the functions of business, not general educating in the practice of managing. Using the classroom to help develop people already practicing management is a fine idea, but pretending to create managers out of people who have never managed is a sham. It is time that our business schools gave proper attention to management" (Mintzberg, 2004, p. 5).

Pfeffer and Fong (2002) summarized the common criticisms of business schools as: "an overemphasis on analysis at the expense of both integration and developing wisdom as well as leadership and interpersonal skills" (pp. 79–80). They then added that "There is little evidence that mastery of the knowledge acquired in business schools enhances people's careers, or that even attaining the MBA credential itself has much effect on graduates' salaries or career attainment" (2002, p. 80).

We believe that the time is overdue for business educators to re-examine their approach to the teaching of graduate students, particularly MBA students. The time is now to focus more energy and innovation on addressing the compelling need for more principle-centered leaders. This will require changing some fundamental assumptions about both what we teach and how we teach it. We must shift our focus away from simply imparting knowledge and skills and toward developing people.

Along with respected leadership writers such as Bennis (1989), DePree (1989), and Lowney (2003), researchers at the Center for Creative Leadership (CCL) also believe that all people have the potential and capacity to develop as leaders. Van Velsor and McCauley's (2003) review of 30 years of research on leadership at CCL shows that the most powerful developmental experiences contain three key factors: (1) Assessment, (2) Challenge, and (3) Support. These factors "motivate people to focus their attention and efforts on learning, growth, and change. . . [and] provide the raw material for learning" (Van Velsor & McCauley, 2003, p. 5).

In the CCL model, *Assessment* consists of gathering data about what aspects of a person's behavior or skill set need to be changed; this data collection might be as formal as a 360-feedback process or as informal as reflecting on a recent problem. *Challenge* consists of stretching a person beyond his or her level of comfort, knowledge, skill, or perceived ability; this might include setting difficult but achievable goals, examining long-held assumptions, or practicing complex techniques. *Support* consists of encouraging and validating a person's change efforts; this might include coaching and mentoring, debriefing experiences, or providing opportunities to apply learning.

How do these factors influence development? First, Assessment is believed to help people see where they are in relation to where they want to be, which increases their desire to change and their ability to make the right kinds of changes. Assessment thus provides both purpose and direction. Second, Challenge is believed to help people test themselves while testing new ideas, methods, and perspectives; this, in turn, increases their sense of self-efficacy and allows them to decide which new ways of thinking and doing are most valuable to

them. Challenge thus sustains momentum and teaches from experience. Third, Support is believed to help people feel less vulnerable to the inevitable pain and confusion associated with developmental learning, which increases their ability to incorporate lessons into their lives. Support thus makes learning actionable (Van Velsor & McCauley, 2003).

Many of the most innovative business education programs have implemented the kind of activities described above. They go beyond giving students exposure to material and then testing them on exams. They create an environment for reflection, building self-confidence, increasing self-awareness, and personal growth. They also take an integrative, as opposed to segmented, approach to curriculum design.

8.4 New Approaches to Business Education

Leadership development is not dependent on a single factor, or a set of factors, and there are many opinions on how best to teach leadership.

Corporations and management consultants contend that leadership is best learned through practice and experience, challenging stretch assignments, job rotation programs, and mentoring activities. The consulting firm McKinsey & Company study, *The War for Talent*, found that top performers were five times more likely to leave their organizations if development opportunities were inadequate, and also revealed the more effective forms of development for retaining top performers. Effective practices included challenging, stretch assignments, job rotation programs, high-quality feedback from managers, and mentoring. Personal development plans and involvement in cross-functional project teams are also used at numerous companies to stimulate leadership development (Michaels, Handfield-Jones, & Axelrod, 2001).

Business schools contend that corporate and management consultant leadership programs are usually geared to specific company or industry issues, and not to the corporate environment at large. Business schools posit that leaders need broader capabilities that build on experience, draw on critical business knowledge (accounting, finance, marketing, and strategy), and include developing critical execution competencies, such as problem solving, decision making, and communications. Most, if not all, MBA programs provide the basic business knowledge and develop execution competencies, whether explicit or implicit. Preparing leaders is a long-term commitment. The argument is not whether industry or academe is best suited for leadership development. It takes both.

A good example is Loyola Marymount University's (LMU) Executive MBA (EMBA) program, which takes a holistic approach to leadership development. Their leadership development model has the following "what leaders do" components:

1. Business knowledge that is strongly rooted in theory that has been tempered and informed by practice. This is sometimes referred to as "core courses" in some MBA and Executive MBA programs.
2. Application of business knowledge is through core managerial competencies. A leader/manager has to know how to solve problems, make decisions, work with people at all levels in the organization, and communicate effectively both within and outside the organization.

This is true for most, if not all, MBA and EMBA programs. Indeed, AACSB accreditation standards require it. But LMU's approach adds a third dimension – personal career development. The LMU model refers to this component as Leadership Intelligence (LI), which derives from Lowney's (2003) leadership assumptions described previously. The common thread of these assumptions is emphasis on "who the leader is."

In *Heroic Leadership*, Lowney (2003) reveals the principles that have guided Jesuit leaders in their diverse pursuits for more than 450 years, pursuits that have resulted in a significant success story of continuous organizational performance. Their contribution to education is evidenced by the 28 institutions of higher learning in the United States, including Georgetown, Boston College, LMU, and Fordham. Lowney finds that the Jesuits' enduring success rests upon four core leadership principles:

- Self-awareness – understand your strengths, weaknesses, values and worldview
- Ingenuity – confidently innovate and adapt to a changing world
- Love – engage others with a positive attitude that unlocks their potential
- Heroism – energize yourself and others with heroic ambitions and a passion for excellence.

The LMU Executive MBA curriculum links LI into the curriculum through specific learning outcomes that are included and assessed in the course syllabi. LI principles are also integrated into courses, usually through learning outcomes, where appropriate. These outcomes are included in the syllabi, making it easier to identify which LI principles are addressed in a particular course. While there is no way of forcing students to internalize these principles, of course, there is evidence that students who take learning seriously are able to apply them in their personal and professional lives.

The LMU EMBA program also measures student learning, primarily by assessing outcome achievement. Assessing student learning in Leadership Intelligence is challenging because there are no truly objective measures of "soft skills" or internal growth. Nevertheless, they rely on two means of assessing learning. The first is observing which learning outcomes are present in the course syllabi and how students are required to demonstrate the relevant knowledge or skills. The second is through the learning process. For example, open-ended questions on post-module and post-program surveys tell much about what individual students are learning. Comments such as, "I gained tremendous insight about my self in dealing with people," "Our team was able

to accomplish significant results on our project, this was accomplished by each of us engaging others with respect," and, "I gained tremendous self confidence" provide anecdotal evidence that students became more self aware (i.e., learned more about "who they are").

LMU is not alone in its efforts to create a new model for graduate business education. The MBA program at the University of North Carolina's Kenan-Flagler Business School emphasizes a "4-step process [that] supports repeated cycles of leadership development." The process begins with *Principles* and competencies learned in a classroom setting. Students then put principles into *Practice* through simulations and real-world consulting experiences. *Feedback* from team members, supervisors, and assessment instruments then lets students gain perspective on strengths and areas for improvement. Finally, *Reflection* with peers and coaches lets them process their experiences. The cycle completed, the process begins again with a new set of principles[2].

Babson College in Wellesley, Massachusetts began making major changes to its MBA program in 1989 as part of a complete overhaul of its business curriculum (Cohen, 2003). Babson's principle innovation was to integrate the MBA subjects into what are now 4 "cross-disciplinary" modules that make up the first year of the two-year program. These modules are known as: Creative Management in Dynamic Organizations; Assessing Business Opportunities; Designing and Managing the Delivery System; and Growing and Renewing Businesses[3]. Cohen (2003), a senior faculty member at Babson who spear-headed the effort, explains that this integrated design requires faculty to collaborate on virtually everything, including syllabi, classroom instruction, and exams. The integrated modular approach also emphasizes what MBA students actually need to know as future managers versus simply what faculty might want to teach as subject experts. Second-year innovations include an optional track called the Babson College Fund (BCF), which "allows a selected team of MBA students to actively manage a portion of the Babson endowment" [4]. The BCF, in essence, combines relevant coursework with this real world experience.

8.5 Challenges and Obstacles

There are several potential obstacles in making these innovative changes to graduate education programs. Perhaps the biggest initial obstacle is the one that Kotter (1999) found to be the leading cause of failed change efforts in his research – failure to establish enough sense of urgency. Applied to the current state of graduate business education, this may be a significant obstacle because: (1) despite persistent criticisms about the merits of conventional MBA

[2] http://www.kenan-flagler.unc.edu/Leadership/MBAProcess/Overview.cfm

[3] http://www3.babson.edu/MBA/programs/twoyear/

[4] http://www3.babson.edu/MBA/programs/oneyear/One-Year-MBA-Intensity-Tracks.cfm

programs, their popularity has not waned; they tend to be good money makers for business schools and if people keep coming why change things? (2) academic institutions are notoriously slow to change anyway (Belasco, 1990). Graduate programs that brought about substantial change rely on an influential group of faculty champions with supportive administration. A single idea champion will not likely bring about significant change in academic environments.

A second obstacle is the nature of academic programs themselves. The semester structure tends to promote a very modular approach to learning. A student may learn leadership concepts and apply them one semester, but then forget all about them after the final exam. The following semester the student may need to focus on entirely different topics and subject matter, such as operations management or global economics.

Principle-centered leaders are not developed in a single semester. One of the key beliefs about leadership espoused by several writers (e.g., Bennis & Goldsmith, 2003; Lowney, 2003) is that leadership is an ongoing process. We agree. We also do not expect students to stay in graduate school for decades (although some students seem to make that goal a life ambition!). If institutions of higher education are truly serious about developing leaders, then leadership needs to be addressed as an ongoing curriculum element throughout the degree program. Mintzberg's (2004) observation on this issue is well taken. He said, "...you do not develop leaders by dropping in a course on leadership amid all the others depicting managers as analytical decision makers" (p .41). Leadership cannot be an isolated course. It needs to permeate the curriculum.

However, these approaches can push faculty out of their comfort zones. This is a common barrier to change in any environment, but it is especially challenging for college and university faculty because of the long-standing traditions of faculty freedom, independence, and curriculum control that they typically have within both their institutions and their individual courses. Not all business faculty believe that developing leaders is either possible or the best use of the school's resources. In fact, at the institution of one of the co-authors of this chapter there was a recent attempt to eliminate the leadership course from the EMBA curriculum entirely. Among those faculties who believe developing leaders is a worthwhile pursuit, there are some who are unsure of how to integrate leadership with their course content (this underscores again how much faculty think about content as opposed to students' needs).

Finally, some faculty lack more than the motivation to engage in effective leadership development; they also lack the necessary skills, interest, time, and energy to help students grow as individuals. Perhaps what is needed is a different model for faculty evaluation, one that rewards faculty for engaging in leadership development, if we are really serious about getting faculty more involved. But before that is possible, we need to reexamine how to measure overall learning in graduate business education, and specifically how to evaluate leadership development.

8.6 Conclusions

We have addressed several issues in this chapter. We have talked about the widespread corruption scandals that have shaken stakeholder trust in business. We have talked about our educational institutions, particularly graduate degree programs in colleges and universities and the roles they traditionally play in leadership education. We have talked about consulting groups and the different way they approach leadership education and assist in the retention of top performers. We have identified a few innovative graduate programs – at LMU, North Carolina, and Babson College – that are attempting to change the face of leadership education. Sadly, we have also talked about the many problems inherent to MBA and other graduate degree programs. Certainly, one would expect, particularly when taking into account the high cost of most of these programs, that there would be demonstrable evidence that they contribute to the student's future career success. What we find is, at best, mixed results.

There is a need to develop better leaders. We find evidence of this in virtually every newspaper in the world, every day, every week, in every city, every town, every hamlet, and in every suburb. This need for better leaders carries with it both an opportunity and an obligation for higher education and, in this context, graduate business education. We need to do a better job of designing graduate business programs that do more than teach content and subject matter; we need to focus on teaching people. We need to help our students grow. We need to encourage self-awareness and reflection so that the person can grow. We need to focus on principle and character and integrity. For, as the old saying goes, "If nothing changes, nothing changes."

Years ago, singer Bob Dylan told us, "Times, they are a' changing." More recently, Warren Bennis and Joan Goldsmith (2003) added, "To observe that times are changing is an understatement" (p. 49). They continue:

Never before have business institutions faced so many challenges, and never before have there been so many choices over how to face those challenges. Public mistrust of the leadership of all of our institutions today is rampant... As we confront the dearth of leadership at this moment we are forced to face the question "Can we do it?" Can we fill the void? What will the world of leadership in organizations look like in 2020? (2003, pp. 49–50).

In response to those provocative questions, we reiterate our vision that the leadership landscape of 2020 should be filled with leaders who focus more on principles than pretended profits, leaders who demonstrate integrity more than chicanery to meet quarterly projected earning statements, and leaders who delight in serving others more than serving only their own agendas. As educators, we can help our students become principle-centered leaders. Not only can we, but we must. However, to accomplish such an ambitious vision we need better graduate business models of leadership education that focus more on developing leaders than simply transmitting leadership theories.

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Chapter 9
The Misalignment of Management Education and Globalization: Conceptual, Contextual and Praxeological Issues

Roulla S. Hagen

9.1 Introduction

The chapter argues that globalization has heralded a new era and a different way of working and managing (Albrow, 1996; Dicken, 2007; Friedman, 2005) that is characterized by turbulence and rapid change, requiring management educators to reconsider how they are preparing managers and the pedagogical underpinning of their curriculum. Criticisms of the 'condition' of management education, and of the MBA in particular, have become more vociferous as the complexity, volatility and unpredictability of the global business environment, within which organizations operate, intensifies. Most MBA programs have rightly been accused of being anachronistic or reductionist in their curriculum, and irrelevant in the preparation of MBAs to manage in a globalized, interconnected world.

At the surface level of the business environment, there are observable homogenous symbols which lull the uninformed in attempts at efficiency and standardization both in the work place and in education. Yet at a deeper level, there is fragmentation, heterogeneity, diversity, and dispersion, where complicated organizational configurations disaggregate the processes of work out-sourcing or off-shoring these across the globe for a range of motives. These changes are challenging because simple choices are no longer adequate. They require the simultaneous management of contradictions and tensions of similarity and difference, of big and small, of decentralized and centralized processes, and of the management of the global as well as the local (Prahalad & Doz, 1987). As Feldman (2006, p. 959) implores us

> do not accept that the world consists of zero-sum dichotomies such as participation *or* control, flexibility *or* accountability, technical solutions *or* political solutions. In accepting such dichotomies spells failure, and believing in them is the route to paralysis.

To engage and try to understand such paradoxes requires conceptual adeptness developed from multidisciplinary and multifaceted perspectives;

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it requires the ability to be able to question taken for granted assumptions, to probe and question and make sense of the context, and to enable choices to be made based on good judgment which will lead to the most appropriate action. This means management and management education has to 'veer from the dominant positivist paradigm' (Lewis & Keleman, 2002). A dualistic thinking where management must choose between two extreme opposites as Clegg et al. (2002, p. 485) confirm 'is now outside the mainstream of organization theory', but has not necessarily reached curriculum design where many programs privilege one approach at the exclusion of others (discussed later in the chapter cf. Table 9.1).

The forces and drivers of globalization, combined with the technological revolution, have enabled inter-connectivity and intra-connectivity in corporations which are unprecedented (Ghoshal & Bartlett, 1999) and are having a multifarious impact on the business environment. It is important, albeit briefly, to understand the scale and scope of these changes, which are intensifying, and the challenges that they pose for management education to stay current and relevant. Alongside the traditional forms of trading across borders is the more anarchic internet compressing time and space, eliminating costly intermediaries, providing information over-load and problematizing traditional ways of operating. Technological change and innovation is intensifying global competition, increasing automation and speed to market and creating overcapacity, whilst at the same time rendering some products and industries obsolete. These are rapidly being replaced by new knowledge-intensive service and high-tech industries requiring different skills, knowledge, and experience. A crisis of de-population and a burgeoning greying population in advanced economies, and a younger expanding population in the developed nations is changing the geo-political agenda leading to the internationalization of labor in search not only for low-cost labor but also for superior skills and knowledge (Drucker, 2001; Friedman, 2005; Govindarajan & Gupta, 2000). The new emerging economies are producing new types of corporations challenging the traditional forms of international management and tried and tested internationalization strategies leading Prahalad and Lieberthal (1998) to proclaim 'The End of Corporate Imperialism' by Western companies in the new world order 'guided by a narrow and often arrogant perspective'.

Neither are public institutions protected from the changes which are affecting the long term funding of social programs of international, central, and local governments. 'OECD national governments are no longer prepared to be the sole funders of higher education' (Hagen, 2002). The troubled global community, faced by an ecological time-bomb, is also demanding that managers manage their organizations in more responsible, ethical ways, and the demand of corporate social responsibility and service-learning programs are gaining greater attention and an increased demand to be included on management education programs (Dipadova-Stocks, 2005). Pressures for efficiency, value creation, and the spread of risk have seen the full utilization of strategic choices for growth and development such as exploitative and exploratory alliances with

a growing trend in non-equity agreements, joint ventures and mergers and acquisitions creating a constellation of complex organizational arrangements with permeable organizational boundaries (Child, Faulkner, & Tallman, 2005). Yet such alignments are experiencing high levels of failure with as many as three in four failing due, to a large part, to their mismanagement (Marks & Mirvis, 2001; Medcop, 1997). Such failures contribute to the destabilization of customers and suppliers, further adding to the unpredictability and uncertainty of the environment within which managers have to manage. This does not mean environmental determinism, quite the contrary; it is an interdependent relationship and a call for intentional, effective action not driven from a scientific prescriptive perspective but through an understanding of the political, social, and cultural context of organizations. Such dramatic changes, it is argued, require a radical review of the management education curriculum to further develop intelligent, skilled, and experienced managers to have the conceptual, contextual ability, and the personal and professional skills to be able to sift through the information overload, make sense of what is happening, to manage through the turbulence whilst at the same time safeguarding the livelihood of the workforce and creating a dynamic and creative environment for heuristic, innovative activities to take place.

The problem then is a misalignment of management education on numerous levels.

Conventional management education adopts a reductionist, narrow curricula which still largely promotes a dominant organizational form by adhering to bureaucratic, hierarchical structures with their underlying philosophy of instrumental rationality, "These models define rationality as internal consistency of choice, self-interest maximization, or maximization in general and consider as non-rational any departure from self-interest" (Rocha & Ghoshal, 2006, p. 590). To prevent such behavior, this traditional view of management imposes control and the 'subjugationof individual initiative' (Ghoshal & Moran, 2005). Segregated management and worker structures legitimize an exclusion environment where scientific management principles are exercised, managers 'tell' and workers 'do' the Frederick Winslow Taylor way, or in the Weberian 'iron-cage of bureaucracy', hierarchical structures produce managers with a normative view of the organization and a management style that is top-down and non-participatory. In contradistinction, new organizational forms are emerging (Bartlett & Ghoshal, 1998; Roberts, 2004). Hedlund (1986) calls them heterarchies, flatter and more geographically dispersed structures enabling faster and more responsive decision-making and delegation of responsibility. All this requires radically different qualities and abilities of managers to manage in the complex context outlined above. Ghoshal and Bartlett's research (1999) found corporations were developing what they called complex 'third generation strategies' in 'second generation organizations' to be managed by ill-prepared 'first generation managers'. Traditional organizations are being pressured and out-performed by some of the more fluid postmodern organizational forms to change. In a knowledge economy where innovation and talented

people are creating the value, it requires taking a holistic strategic approach to manage the change required. There are examples of new horizontal organizational forms where senior managers have considered what is required to achieve skilful horizontal, operational, intellectual, social and emotional integration, and co-ordination by placing as central the behavioral context and building internal relationships on trust and the democratization of information[1] (Ghoshal & Gratton, 2002; Gratton & Ghoshal, 2005).

Normally, the academy's attention has been on the management of private organizations but more recently there has been a plea from numerous sources for a focus on public sector management (D'Aunno, 2005; Hambrick, 2005; Ouchi et al., 2005; Pettigrew, 2005) both for research and management education (Feldman, 2006) following the high profile mismanagement of the crises caused by Hurricane Katrina, 9/11 and the Tsunami. As noted by Ostroff (2006, p. 141), the 9/11 commission reported "symptoms of the government's broader inability to adapt how it manages problems to the new challenges of the twenty-first century". The evidence is mounting that management education must address the pressing current issues faced by management in both the public and private sector to contribute to the well-being of society. But the dominant view of the last two decades of a Porterian static, fixed and known environment where the competitive cake could be fought over using the simple tools of PEST and Five Forces is now eschewed favoring a dynamic reality that is in a state of 'becoming' (Cooper & Law, 1995), viewing reality as a process of continuous making. There is no blueprint, each new organization form is unique and dependent on its administrative heritage, industry context and combination of the process and relationships between its people, the actions they take in each moment of each day. This is not about environmental determinism, it is a polemic about how well we manage and it is about the practice of strategic *management* as an ongoing unending process. Taking this view demands a different management education curriculum.

While the majority of the attacks have been directed at the MBAs for failing to manage effectively, the criticism has more recently found its rightful place in identifying business schools and management academics as culpable for privileging a dominant philosophical approach in the design of the curriculum leading to the present dire situation in management education (Ghoshal, 2005; Grey, 2004). What is encouraging is that the anomalies between a dominant MBA curriculum paradigm and its relevance or its current educational validity are accumulating (cf. Kuhn, 1970) and slowly challenging the defensive reasoning mindset in the 'natural' practice of designing an MBA curriculum from one dominant model as counterproductive. Whether this will, in the long term, be enough to reduce the 'anti-learning' (Argyris, 2003) is, without question, going to be extremely difficult to predict.

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[1] Examples of the companies that were part of the sample from which these integrating processes were identified and how they each developed their own distinctive processes can be found in the two articles by Gratton and Ghoshal.

This growing social debate is producing criticism and disagreement about the causes of the 'dysfunctionality' of management education and more specifically with the MBA and a search for a way forward. Two camps have emerged as a response. The first is a non-participatory withdrawal from the MBA, the second is to take action and to address the underlying paradigm informing the design of the MBA and use it as a change agent to restore the reputation of management as a 'force for good.'

The genre of dystopian fiction as a literary form, led by the three great exponents of this tradition: Zamyatin (1924), Huxley (1932) and Orwell (1980), warn of an anti-utopian world and heighten awareness of the impact. There is a detectable non-fiction dystopian genre in management writing with Mintzberg (2004) being the most prolific author in both the academic literature and in the popular press. Mintzberg uses tools of dystopia effectively to express his concerns about the dysfunctional impact of the MBA on the malfunctioning corporate world and society more generally. Typical of the characteristics of dystopia there are dark, apocalyptic themes of thought control through the dominant teaching mode of heavy analytical case analysis and for Mintzberg these are embodied in the Harvard Case teaching approach which is context-free and deludes the student into thinking they are learning about implementation. At the root of this argument is that MBA students lack adequate managerial experience before they undertake an MBA, a view modified by Armstrong (2005) as not universal and citing the UK experience. As a result, Mintzberg argues that the curriculum is overly analytical and students are underdeveloped due to a domineeringly narrow curriculum and are released from business schools to create havoc on the corporate world. Citing the Economist Intelligence Unit in 1998 where 42% (Mintzberg calculates 40% for 2001) of the hundred largest US corporates were run by MBAs, he also quotes that "HBS alumni currently comprise about 20% of the top three officers of Fortune 500 companies" (Mintzberg & Lampel, 2001) in response to an article on why CEOs fail Mintzberg asserts that a disproportionate number of the failed CEOs have MBAs and on further examination the failure was due to 'bad execution' and 'people problems'. He concludes that this is due to MBA's not understanding the context of the specific business and industry in question and lacking team qualities.[2] Mintzberg's views attract huge attention and comment. Like the individuals in dystopian fiction there is a sense of hopelessness and the subversion to rebel. In Mintzberg's case, his subversive action has been to withdraw from any involvement in MBA education and to condemn the degree at every opportunity. Since the MBA attracts so many management students would it not have been more effective to be a 'theoretical guerrilla', fighting from within, designing programs based on different assumptions? Or as with dystopian fiction does it ultimately change nothing? I fear the latter is the case.

[2] The simplicity of such an argument is attention-grabbing and stimulates debate but there is place now for rigorous research to explore the subject matter in more depth than the unicausal effects being claimed here.

Gosling and Mintzberg's (2004) much coveted and innovative MPM program, influenced by Ghoshal's earlier program at INSEAD (Mintzberg, 2005), is highly resource-intensive demanding a premium price. So whilst we can take from the innovative curriculum it has to be acknowledged that it is a different animal not an alternative to the MBA.

A dystopian society, resulting from higher education dystopia, also underpins the MBA curriculum debate more generally and is articulated by a growing and varied body of writers converging on their concerns for management education: first, a burgeoning literature is developing on a neo-liberal agenda as a dominant ideology pervading education. There has been mounting concern that the education reforms have been pervaded by market values and been taken over by neo-liberal groups using a different corporate language not found in conventional education discourse (Rust & Jacob, 2005). The marketisation of education and the commodification of knowledge seem to be a universal description of education (Geo-Jaja & Zajda, 2005).[3] Education as a commodity goes beyond the analogy to fact in the following move to equate education with the same conditions as other global traded products. As the worldwide education industry is worth an estimated $2 trillion per year Waite, Moos and Lew (2005) draw an apocalyptic picture of education as a global commodity by stating that there is a concerted effort for higher education to fall under the General Agreement for Trade on Services, or GATS, treaties to enable education services to be exposed to international competition 'with minimal government interference' or 'public accountability' thereby absolving it of 'public responsibility'. They fearfully conclude that this will mean academic domination or 'academic imperialism', probably from the US, that is pushing for inclusion under GATS.

The neo-liberal agenda is seriously affecting the mission of the university (Sabour, 2005). The pressures to provide society with higher education at a lower cost with greater efficiency restricting the scholar's autonomy is affecting the 'intellectual craft and the quest to accumulate and articulate knowledge' the academic is now housed in the "iron cage" of rationalization. Sabour bemoans the loss of a 'historical mission of raising the intellectual tone of society and cultivating a critical mind . . . the business orientated utilitarian conception that prevails in the assessment of knowledge is coming increasingly to resemble that of a national company due to the need for sponsorship, higher fees and position in the rankings, rather than an institution of higher learning. (Sabour, 2005). The evaluation of education has also become mechanistic conforming to officially defined outcomes. As a result conventional restrictive 'distal modes of thinking' (Cooper & Law, 1995, p. 239) where thought is reduced to "what is simplified, distilled, it's like fast food – packaged for convenience and ease of consumption" has come to dominate the management education and MBA

[3] A recurring theme across the forty-seven chapters in the 'International Handbook on Globalization, Education and Policy Research- Global Policies and Pedagogies' edited by Zajda (2005) has the neo-liberal agenda privileging itself above all other perspectives.

curriculum; both have been consistently condemned (Chia, 1997; French & Grey, 1996; Grey, 2004).

9.1.1 Ivory Towers and the Separation of Academe from Practice

There are four distinct debates regarding the issue of the 'Ivory Tower' syndrome or the 'flight from practice' (Wraga, 1999) which are relevant to the design of a leading edge, radically different management curriculum. The first is the woefully low dissemination rate of management research. If the statistics are correct, an average of 2.5 people, normally other academics, read scholarly journal articles (Bartlett, 2005) leading to the conclusion the communities of 'academic quality' and 'practical relevance' are mutually exclusive "hold very different, if not irreconcilable world views" (Baldridge, Floyd, & Markoczy 2004). In contradistinction to this is the position Schendel (quoted in Baldridge et al., 2004) holds that the two communities are 'mutually reinforcing.' The investigation by Baldridge (2004) on whether academic quality and practical relevance are mutually exclusive or mutually reinforcing found a positive relationship between academic quality and practical relevance and conclude that

> efforts to increase relevance by loosening academic standards are misguided and academicians and practitioners alike need to pay attention to the academic quality of management research.

CEOs such as John Reid from Citicorp explains the value of quality research to him (Huff, 2000, p. 58)

> Academics stand farther back and draw from the disciplines to get a better sense of what is going on. My own experience has been that [research] tends to be more useful than the [research depicting best practice] because it creates a framework that allows practitioners to understand how to locate the specific business problems that we may be dealing with within a broader space.

We should remember that whilst theory and theorists and practice and practitioners do not live in different worlds but come together in praxis. Ghoshal (2004) provides a persuasive argument that there is a negative effect from academic research for the practice of management if they promulgate and 'propagate' ideologically immoral theories which remove 'human intentionality and choice' and the students actions' from their consequences on society. If the shelf life of management knowledge is reducing, then there should be attention given to how the curriculum can expose management students to leading edge on-going investigation in their business/management schools drawn from multiple perspectives.

The second controversy surrounds the problem with academics who find it difficult to teach executives and MBAs. This has resulted in an impasse

with a growing number of scholars working on leading edge research unwilling to participate on post-experience or MBA programs, further impoverishing the curriculum. Resourcing problems have resulted in wrongly situating executives on the MBA curriculum in a teaching role as adjunct faculty raising concern that these degenerate into nothing more than 'war stories' because of the absence of theoretical underpinning attracting accusations that management programs; in such circumstances, become nothing more than a 'trade school' and contrary to popular belief this is not what top management students are expecting (Business Week 2004: 94). A more sophisticated curriculum design is required so that the wealth of practical contextual executive experience is used in more critically engaging manner to juxtapose and cross-examine the theory being taught either by positioning such contributions as part of a class discussion or as guest speakers – not 'instead of' but 'in addition to' in a symbiotic challenging dialogue. A further problem has emerged in the UK where a teaching fellow career route has developed in business schools alongside the faculty tenure. In the past, this was used to provide new PhD graduates with teaching experience and time to build up a research output. More recently, it has been used to move faculty not researching or to appoint non-research active teaching staff to take on heavy teaching loads to free up the academics to do research. Arguably if the teaching fellows are not engaged in research and have little time to stand back and think due to heavy teaching loads, and are not practitioners then what are they teaching? Not surprisingly this new labor force is being used to alleviate some of the resourcing issues on the program either because professors have removed themselves from teaching or because there is a gap in the faculty in a specific area. Adjunct faculty and teaching fellows act as a Berlin Wall, a physical rather than a metaphorical barrier now separates students from faculty, between theory and practice.

The third relates to the student position. Students at a top Business School held a mock trial in August 2004 and put their MBA program on trial because it they accused their management education program for not fully preparing them to be ethical business leaders (Business Week, 2004, p. 90). In yet another headline, Business Schools were reported to be developing 'skills' at the expense of a more generalist degree to the alarm of the students. In sacrificing a more broad and sophisticated understanding, which can only come from transcending a truly interdisciplinary curriculum, MBA students were complaining that an increasing specialization on MBA program was affecting the quality of the management education they were receiving. The blame for specialization was put firmly at the feet of the companies affecting the input on the core curriculum. This trend cultivates middle managers with a narrow focus to fill functional roles in traditional organizations post-MBA but does not prepare them for the complexities that have been discussed at length in the first part of the chapter.

These rifts are further undermining the academic foundations of the MBA. On the one hand, the diminishing number of research-orientated professors

who provide 'the intellectual firepower' but spend little time with students, on the other the hand the 'hotshot executives' who entertain students with real-world anecdotal stories but lack the educational training to take the students to any depth of analysis or thinking. Trapped in the middle are the students who have, in many cases, laden themselves with debt to be educated.

The fourth factor relates to the multifaceted nature of the post-graduate, post-experience MBA. It is the most complicated program in the Business School's portfolio and yet, perhaps not surprisingly, Schools adopt the traditional management principles to govern themselves and their program. Guided more by Fayol's principles of management than by strategic academic leadership which is required if a coherent, challenging and relevant program, underpinned by rigorous pedagogic/androgogic principles is to be provided. The separation of the organizational elite (here read academics) from the workers (here read program managers or Program Directors who are not part of faculty) is woefully under-researched area in terms of the real locus of decision-making on the content and process of MBA program. Whatever the causes the complicated and paradoxical demands on the MBA have resulted in a confused and confusing array of MBA curricula.

9.1.2 Dysfunctional 'Un' Symbiotic Curriculum – Oscillation and Bifurcation

The lack of engagement with the philosophical and educational foundations in the development of management education, and especially MBA curricula, can be broadly divided into two forms. The first is an ad hoc, serendipitous approach randomly adding on modules or exercises to the conventional curriculum and assuming that this is improving the curriculum; but this only adds to the incoherency of the program and does not address the flawed underlying assumptions on which this is based.

The second problem identified and related to the first is what I am calling an 'excluding curriculum' oscillating and bifurcating between the latest management fads in curriculum design in an attempt to address criticisms of dysfunctionality by privileging one method over all others. This approach to curriculum design mirrors the earlier discussion in the chapter on duality, neither does it meet the demands of a more integrated and critically challenging curriculum to prepare the students for the complexities and hitherto unknown events that they will be facing in managing the fast changing global environment. Table 9.1 identifies some of the most prominent approaches that have tended to dominate. The table provides first the rationale for each approach and then the counter-argument on the limitations of taking any one of these approaches in isolation.

Table 9.1 An excluding curriculum

Too vocational	This approach considers the MBA as a vocational preparation for work. The curriculum is designed as a means to an end, seeks the involvement of industry in curriculum planning and promotes the extrinsic value of the education. It is embraced in an attempt to address the criticism of the relevance of the MBA to the world. Duality approach is taken as vocationalism vs academic
	Counter-argument: "Education as a preparation for work is not the same as being *educated* for work" (Marks, 1999). It is argued that an instrumental education will also lead to instrumentalize in other areas such as corporate responsibility restricting intellectual creativity to produce 'accredited individuals' operating with a means-end utilitarian mindsets unable to see beyond immediate gratification
Competency-based management education	The competency-based curricula has been embraced by both educators and employers because it assumes that 'competence' transcends the levels of knowledge and skills to explain how knowledge and skills are applied in an effective way (Westera, 2001) usually in complex contexts. They refer to an underlying cognitive functioning. The knowledge and skills are drawn from current professional practice and are standardized and open to evaluation and measurement
	Counter-argument Etymologically 'competence' is associated with a minimum standard or requirement, sufficient to complete a task or do a job and does not mean it involves expert behavior. It is, as Westera notes, an intermediate state between a 'novice and expert'. Standardized competences do not have the capacity to cope with a changing world. Competences determined to perform in one context will suffer to perform in a new context and only have any merit in a stable environment
Too skill based	This approach has been adopted as a reaction to a curriculum perceived to be too theoretical. The curriculum pendulum has recently swung towards this approach. Skills are automated routines that allow the execution of well-specified tasks
	Counter-argument As the level of complexity increases it is assumed that successful behavior cannot be explained by the presence of skills alone (Westera, 2001). Skill-driven reductionist curriculum – strong on skills but weak on conceptual thinking
(Too) analytical – case method	Reducing managing to decision-making and decision-making to analysis and analysis to a technique. This view promotes a highly pragmatic approach to management to just analysis Mintzberg (2004, p. 38). It provides clear unambiguous linear approaches to problem-solving. The Harvard Case Method is used to promote this approach

Table 9.1 (continued)

	Counter-argument It removes the behavioral context and human intentionality. It represents an unrealistic consensual view of the world where organizations are viewed as rational-economic entities. This underlying philosophical stance does not prepare managers to understand the irrational, informal or complex world they will encounter or to understand why rational and deliberate decisions are very rarely realized
(Too) experiential	The practice-orientated perspective which includes field experience of professionals in training is supported by the research on learning that students learn from being involved. There have been action-learning MBAs which have been underpinned by this view of learning and have taken a problem-solving approach
	Counter-argument More action than learning becoming more organizational development than management learning. As Maclellan (2005) stages "it is not clear that experience of itself does anything other than confirm own prejudices. . .in low-road learning. In low road learning , previously learned knowledge or practices from concrete, experiential situations can be evoked and applied successfully if the situation is 'closely similar' and only requires slight adaptation of the knowledge / practice. The critical feature of low-road learning is its automatic extension into situations that appear to be similar. However if the situation is sufficiently dissimilar 'extant knowledge will not, of itself, suffice" requiring conceptual learning
Discipline silos – fragmentation	Specialized learning requires discrete discipline teaching. This provides immersion and a deeper knowledge in the discipline to prepare students for functional roles. Hegemony of disciplinary knowledge
	Counter-argument Management is a complex activity defying simple explanations. An MBA is not about specialization but generalized knowledge. It requires a curriculum which integrates the theoretical perspectives from organization behavior, human resource management, strategy, organization theory, economics, finance to knowledge to offer a broader process orientated integrative approach for 'synergy realization'. Separate disciplinary silos reinforce 'mental walls' and are counter-productive This approach views knowledge as rational, linear and arranged in separate and distinctive bundles (Stover et al., 1997)
Dominant Management Paradigm) underpinning world view, positivistic – Dominant Functionalist perspective, economic-rational paradigm – agency theory	Structural functionalist model/Scientific model – This view of the world is causal and functional in its explanation and deterministic in its underlying logic. It refers to a particular managerial approach, a top down view of maintaining social order. The rationality of this perspective sees the structuring and ordering of the social world to be similar to the natural world and therefore can be studied in the same way. It

Table 9.1 (continued)

	focuses on 'structural causality' and 'purposive rationality' (Burrel & Morgan, 1979). Conflict is seen as a pathology so that consensus can be restored. Based on an assumption of 'rational-economic man' Homo Economicus motivated by self-interest maximization. Theory is viewed as neutral and value free
	Counter-argument
	The social world is dissimilar to the natural world. It disputes neutrality and views hierarchies in organizations based on power relations which are political and as such are complex and contradictory structures. The Scientific Model is a "pretence of knowledge" because it ignores anything that is not quantifiable as such it "perpetuates absurditities in theory and dehumanization in practice". By focusing on hard deductive reasoning it excludes the role for human intentionality, or choice or developing a connection between management action and consequence, or of any moral responsibility. It ignores all other findings on the motivation of people preferring to take the distrustful position of people's motivation
	Adopting the dominant model is to promote opportunism this has led to managers being considered untrustworthy such "management practice over the last several decades, converting collective pessimism about managers into realized pathologies in management behaviors"
	(Ghoshal 2005, p. 77)

9.1.3 Rethinking the Curriculum

The chapter has presented the range of critiques leveled against the management education curriculum for failing to respond to a globally complex reality and for not adopting an ontology of 'becoming' where the future is not known, where there is no end state. The anachronism of the traditionalist curricularist adhering to a modernist agenda has been vilified for its dysfunctionality. The discussion has demonstrated that the hegemony of the functionalist, positivist, rational-economic as the dominant logic has been dislodged from its privileged position, at least at the level of debate in academic management journals. While the uni-causal 'black box' approach informing management education and curriculum design should now be banished and that any rethink of a more symbiotic, integrative curriculum will necessitate the despoiling of academic disciplines from their isolationist position on traditional management education curricula. Similar to the tensions in curriculum theorizing in mainstream education so it is with the management curriculum which is seen to be 'inherently political, contested and in productive flux' (Wright, 2000, p. 4).

What is to be done? By capitulating to the debilitative condition of the management education, especially the MBA, and allowing it to continue to be

based on assumptions which are known to be, to use the colorful terminology of Ghoshal and Moran, as 'untrue and grotesque' we, the academic community, become complicit. As the MBA, for example, is still hugely popular drawing in enormous numbers through the doors of higher education is n't it the most available vehicle to act as an agent of change, and through which management might be able to make a difference to society – for management to be a force for good? This does not mean embracing fully the Utopian Project, though the current discussion is falling into the utopian genre where "education has been a concomitant part of utopian schemas" (Halpin, 2001, p. 300). Heuristic utopias do provide an 'intellectual space' to think of what is possible and to think beyond the 'reductive barriers of what is currently influential'. The utopian literature provides optimism that the existing reality is neither 'static' nor unchanging. In this respect, there are ways out of the current crisis facing management education. By taking the More's method, it does allow 'thought experiments' to take place on negative situations which are generally thought to require urgent 'amelioration'. (Halpin, 2001, p. 310).

While the management education debate continues management programs cannot be suspended. But there are dangers if we reconceptualize the MBA curriculum, for example. Wright (2000, p. 9) warns against the traditionalist/reconceptualization dualism:

> reconceptualization was a very efficacious concept marking a bold turn to non-traditional topics and conceptualizations of substance and role of curriculum theorizing in the 1970s. However what has sometimes been taken up as a neat dualism with a clear divide between "traditionalism" and "reconceptualization" was always somewhat reductionist, and continued use of both terms perpetuates what has become an outmoded hindrance to undertaking more nuanced discussion of the present and future of curriculum theorizing.

There have been similar concerns in the debates on reconceptualizing management education that they were becoming too esoteric, divorcing theory from practice (Burgoyne & Reynolds, 1997) although an 'interplay' between curriculum theory and curriculum practice is a positive way forward if 'academic balkanization of isolated gated intellectual communities' are to be avoided (Wraga & Hlebowitsh, 2003, p. 434).

9.1.4 Twenty-First Century Management Curriculum – A Way Forward

A 21st century MBA curriculum[4] should encompass difference and diversity, conceptual, contextual thinking and personal and professional development. It

[4] This term was selected to make a simple point in this context in preference to detracting and unduly complicated contested terms that are variously applied such as 'global', 'post-modern' 'post-renaissance' 'beyond traditional' to the curriculum debate.

should be viewed as open and continually evolving, in constant flux and complex change,

> 'requiring interactive and holistic frameworks for learning. Transformative rather than incremental with respect to change requires errors, chaos, and uncertainty through the action of learners and should bypass bureaucratic control that operates in oppressive ways' (Macdonald, 2003, p. 143).

A curriculum that is inclusive, offers multiple perspectives, opens vision, challenges taken for granted assumptions and offers choice, educates rather than trains. We know from research that student's orientation to learning is not static but is influenced by the learning context, such as the curriculum, teaching methods, and assessment (Macdonald, 2003). In recent years, the argument against too much theory badly taught became confused with conceptual learning and the MBA curriculum oscillated to experiential and skill based teaching. The argument running through the paper has been that the changing global context within which managers operate requires mental models, 'propositional knowledge' which enables the creation of new knowledge to solve problems as yet unknown. Conceptual learning therefore is

> The acquisition and application of new knowledge to result in concepts and symbolic representations not previously in the individual's knowledge network, and would be exemplified in learning the meaning of a new idea, making connections between two previously unrelated ideas in general terms, a new behavior or skill is required through practice, while ideas and knowledge are acquired through understanding. (Maclellan, 2005, p. 156).

It enables management students to not only think about the current situation or what has happened in the past but also what might happen in the future. It is not only about acquisition but also transfer and should inform how the management education curriculum is designed to advance conceptual learning.

Oscillation is also found in the 'inordinate influence' focusing on individual factors and personal cognitive processing and sense making in management education especially in the work of Kolb, which, bemoans Webber (2004) 'the corresponding failure to take account of learning as a sociocultural process in which contextual factors play a dynamic role' are ignored. Watson (2001) puts this more succinctly 'individuals are constantly in a process of 'becoming' put simply, people are making their worlds at the same time as their worlds are making them.' A balance is required.

Figure 9.1 illustrates the two parallel pedagogies of contextual and conceptual learning. These can be interwoven with the 'Personal' and 'Professional' Development and integrated within a thematic, multidisciplinary approach so the management students' development can symbiotically evolve through the program. The governance and design of management education program are an extremely difficult and skilful process that should be underpinned by an understanding of pedagogically clear objectives. This does not call for a rigid curriculum but it does require attention to be given to the four ingredients required to be woven into a management education curriculum: the conceptual, contextual,

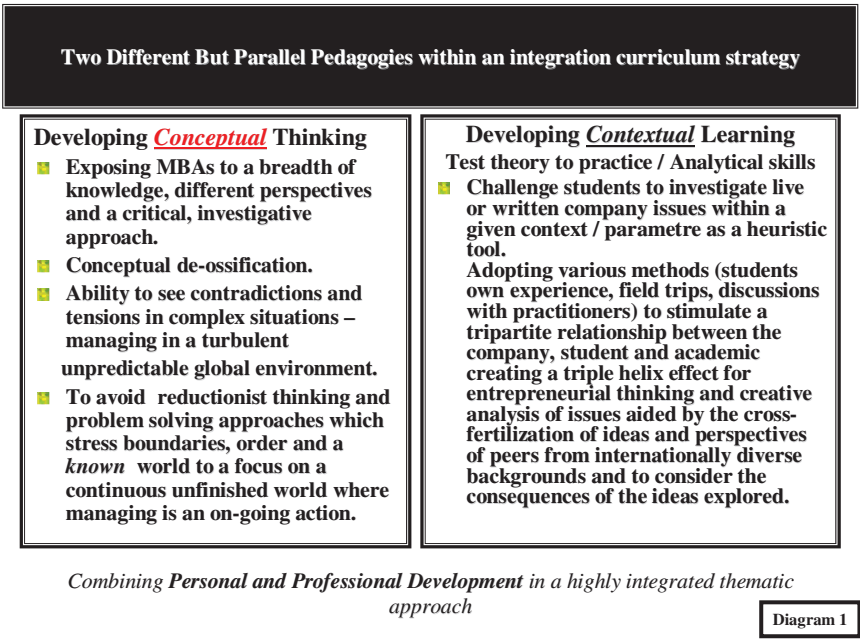

Fig. 9.1 Combining Personal and Professional Development in a Highly Integrated Thematic Approach

personal and professional development and how these will develop in any management education program to equip the students to manage the uncertainty and volatility of an ever demanding globalized world within which their organizations are operating.

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Chapter 10
Master of Science in Business Administration or MBA: Does It Matter?

An Empirical Study into the Impact of Master Programs in Management

Herman van den Bosch

10.1 Introduction

In his book, "Managers not MBA's" Henri Mintzberg criticises the current practice of MBA programs (Mintzberg, 2004). Instead of improving management competencies of practicing managers, many MBA programs focus on students with a limited experience or with no experience at all. Therefore, he concludes with his famous dictum that "conventional MBA programs train the wrong people in the wrong ways with the wrong consequences."

This article focuses on the consequences of management education. The first and second sections reflect the feasibility of management education and its relevance for students with different levels of experience. The third section investigates the effects of MBA programs and Master of Science program in business administration on the mindset of the participants of these programs.

10.2 Can Schools Teach Students to Become a Manager?

Although criticism on behalf of MBA programs is massive, not everybody agrees with the statement that: "Management is a good deal of craft with a certain amount of art and some science. It is a job that is above all practice and consequently, management competences will develop in practice in the first place." (Mintzberg, 2004) Others, like Bennis and O'Toole blame the decay of the MBA on the "academic drift" of business schools that results from its professor's academic affiliations and aspirations (Bennis & O'Toole, 2005). They consider teacher colleges, law, and medicine schools as examples of good practice. For instance, most professors in a medicine school are practicing surgeons. In his turn, Mintzberg rejects the comparison with doctors, lawyers of teachers. According to him, in the latter professions, codified knowledge and skills play an important role and, therefore, teaching is important. He believes that the degree of codified knowledge in management is lower than in medicine,

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law, or education. After all, managers make decisions concerning a complex environment with limited knowledge and such decisions cannot be trained. Nevertheless, these decisions are often decisive for the continuity of a company. However, the frequency of decisions of this kind is relatively low. Every now and then, doctors, lawyers and teachers also face "wicked" problems and consequently make decisions full of impact. For instance, a surgeon who is faced by complications during a heart surgery and a teacher who is faced with a riot between ethnic groups in her classroom. The competences needed in extreme situations, such as mentioned, will develop in practice as well. Schools offer knowledge of the setting in which students will work during their life and train elementary skills. Consequently, in most occupations, management included, we must make a distinction between initial training of inexperienced students and continued learning for experienced people.

Just like only a few medicine students will become a top surgeon, a few students in management will reach the boardroom of a large company and decide about its future. Most management students will occupy middle and staff positions. Nevertheless, the quality of their work is decisive for the continuity of the "business as usual" and the preparation of decisions that the top management has to make occasionally. Much of this work is codified and consequently, can be trained, at least partially.

Besides codified and non-codified knowledge, a second distinction comes up: the difference between academic and professional programs. Historically, an MBA program is a professional program. At this time, due to the above-mentioned academic drift, many MBA-programs offer opportunities for reflection upon the business practice from an academic viewpoint. In addition, these programs acknowledge students with research in a passive and in an active way.

Two types of academic programs are feasible. The first type is generalist. Students study the complicated fabric of functions within companies and the relations between companies and their environment. Specialist programs are the second type. These programs allow an in-depth study of one aspect, for instance human resource management of marketing (Shenton, 2002).

In the next section, we will in the first place make a distinction according to the degree of experience in management. Therefore, we will examine three periods: initial education as a bachelor, further education with the period of 10 years after the bachelor's degree and education in the period as an experienced manager. In each phase, the feasibility of professional and academic programs is evaluated.

10.3 A Life of Learning

Worldwide, a considerable differentiation takes place in higher education, in spite of the so-called Bologna process. In most Anglo-Saxon countries, bachelor programs cover broad fields of science and offer many elective courses. In

other countries, even at bachelor level higher education institutions offer more and more dedicated and specialized programs for reasons of distinction. In addition, some countries – for instance the Netherlands – know a binary system that includes two types of higher education. Universities grant Bachelor of Science (or Arts) degrees after 3 years. Polytechnics (or "professional universities" as these institutions prefer to be called) grant "Bachelor degrees" after 4 years of study. The admittance to universities is limited to students with a 6-year secondary education diploma. The polytechnics are open for students with a 5-year secondary education, diploma.

The professional bachelor degree prepares students for jobs in companies and organisations, usually on an operational managerial level. Instead of entering the labour market, many students with a professional bachelor degree prefer to enrol in an academic master program. A pre-master program of half to 1 year precedes admittance to the university. In the Netherlands, the market value of university-educated bachelors is still unknown, as nearly all academic bachelors prefer to continue their education with a masters degree.

Which competencies do students develop during their initial education and which abilities does the labour market require? A research project of Wim Gijselaers and others deals with the first question (Gijselaers, Arts, Boshuizen, & Segers, 2006). The researchers tried to gain an insight into the ability of students to solve complex business problems satisfactorily. They found that students showed an increase in partially correct solutions and a decrease in false solutions during the years before graduation. Only after their graduation, students started to learn how to solve complex business problems correctly and it took 10 years of practice to become an expert. This is because of the acquisition of dynamic knowledge, in contrast to the declarative knowledge that students learn at the university (Gijselaers et al., 2006). Dynamic knowledge is the ability to evaluate complex theoretical and practical considerations and to jump at a conclusion in a holistic way.

Findings such as these have important implications for education. Education can speed up the development of dynamic knowledge if it offers the opportunity for reflection and relates theory and practice. For instance, a part-time Master of Science program in combination with a part-time job might be the best route to these goals. Students learn how to collect missing knowledge through their own research. The master thesis in particular offers plenty of opportunities to reflect and analyse a practical problem from a variety of theoretical angles.

About 10 years after graduation, people reach the expert level within their current jobs. In the subsequent years, changes of jobs take place more frequently. At the same time, companies start to screen employees and differentiate between those who have potential as executives and who will grow into leading staff positions. Candidates for executive positions usually enrol in company-specific management development programs or in an executive MBA-program. High potentials usually qualify for high-quality and therefore expensive executive MBA-programs. These programs offer perfect conditions

to reflect upon their own experiences and to learn from their bright fellow participants and, last but not least, to develop a useful network.

The number of candidates for executive positions is seldom higher than 20% of all employees with higher education background. The rest is predestined to serve as a senior staff member in the company. For this group, the time has come to consider a new job or of a new course of study. For those without a Master of Science degree, the choice is evident. For senior staff members an academic degree is indispensable. As they will operate in specific domains, for instance finance, human resources management and marketing, a specialist degree is preferable.

10.4 Effects of Higher Education Programs in Business Administration

According to Mintzberg, a MBA-programme is definitely not suited for students with limited experience as a manager or no experience at all. Students are equipped with a set of analytical tools and some knowledge about functional areas. These programs contribute to a "pervasive corruption from education through management to organizations and into society" (Mintzberg, 2004). This reveals itself in a specific "MBA-mindset". Their educational programs do not require that these students reflect upon companies and the assumptions behind the dominant economic theory. In 2002, the Aspen Institute published a report called "Where will they lead". The conclusion of this report is that MBA-students have a shift in priorities during the 2 years of business school from customer needs and product quality to the importance of shareholder value. On the other hand, experienced managers tend to change their thinking in the other direction.

In addition, according to Mintzberg's own research, MBA alumni are only moderately successful and they certainly do not outperform CEOs through a different background, as university bachelors or alumni form other disciplines. Others give additional evidence (Pfeffer & Fong, 2002).

Mintzberg and others as well (Bennis & O'Toole, 2005; Cabreta & Bowen, 2005; De Woot, 2005; Ghoshal, 2005; Lorange, 2005) have contributed to the description of the "MBA-mindset" mentioned above. This mindset is the joint effect of personality and education.

Figure 10.1 is the summary of the characteristics of this mindset. The second column gives a short description of the mindsets or the behavioural preferences that managers on the other hand ought to demonstrate.

If Mintzberg is right, MBA alumni will report an increase in attitudes as described in the left side of the table during their education. We have tested this hypothesis for all alumni of the EuroMBA, an AMBA-accredited distance learning MBA program, offered by a number of European business schools and developed by the Open University in the Netherlands.

We also wanted to know the opinion of teachers about the direction into which students attitudes will develop most likely. Therefore, we formulated a

	Mindsets of MBA Graduates	Desired Mindsets of Managers
1	The pursuit of strong leadership and control; Identification with "heroic" CEOs; power and money as motives.	Leadership is a process of inspiration, empowerment and support that enables others to take responsibilities for parts of the organisation; the creation of value and personal fulfilment as motives.
2	The increase of shareholder value is the ultimate aim of each CEO.	The CEO takes responsibility for all "stakes" that influence the continuity and long-term profitability of the organisation; market, consumers, public opinion, government, environment and shareholders.
3	The structure of the company reflects the need of safeguarding influence of the top management; pursuit of acquisitions and integrating new branches into the company's organisational structure.	The structure of the company must encourage employees to spend their physical and creative power in collaboration for the company. Employees must feel "ownership". Hence, culture is of utmost importance.
4	Strategic choices, as embodied in middle and long-term plans, determine the position in the market and the comparative advantage in relation to competitors.	Companies operate in a rapidly changing world and market opportunities are changing frequently. The company has to organize itself in such a way that competent people are in positions to react immediately to these changes. This means less hierarchy, less control and more decentralisation.
5	Government, NGOs, public opinion leaders and the general public are considered as externalities like wars, earthquakes and unforeseen events which influence have to be limited and controlled.	As companies are parts of the society, they have to contribute to the pursuit of societal values, as gender, equality, justice and environmental preservation. The contribution of a company to these values is part of its mission and part of its accounting activities as well.
6	The company has to invest in the development of the competences that it needs. Consequently, the human resources department will develop programs to deal with deficient competences for all employees. Employees' careers depend on successful participation in such programs.	The organisation of the work process allows people to experiment and to learn from each other. Educational facilities are additional and based on the experiences in the workplace. The company enables personal development by facilitating learning independently from the short-term needs of the company.
7	Companies have much in common. They have to increase their share in the market and consequently their turnover in order to realize highest profits. Because of this common denominator, CEOs can easily hop from one company to the other and will choose a company that offers best opportunities.	The long-term survival of a company depends on its detailed knowledge of the "fabric" of the business ecosystem and its power to use this knowledge. In addition, the long-term position in the market depends on its innovative potential. CEOs who have detailed knowledge of products and markets have proven advantages to their colleagues who do not.

Fig. 10.1 Mindsets of MBA graduates and desired mindsets of managers

8 Most CEOs with a background as MBA consider this background as an advantage. It is also proven that this background contributes to their income.	Evidence exists that companies with CEOs with an MBA background do not have better commercial results than companies who do not. On the contrary, most successful managers are those who have a long-term connection with one single company and possess detailed knowledge of the products, the product process and the markets.
9 Those who believe in the relevance of training prefer programs in which skills are taught and learned, which – by the way – is at odds with most existing programs.	As management skills develop in practice, reflection of these practices has to be the foundation of educational programs. Reflection means evaluating the outcomes in the light of different and not only obligatory perspectives.
10 CEOs who stress their role as leader needs indicators to evaluate the effectiveness of their employees. These indicators are turnover, profit and – most importantly – equity-value. Performance indicators are valued tools with regard to the staff.	The necessity to behave in accordance with performance indicators only has short-time effects, because it awards risk-avoiding behaviour and is a source of stress in the workplace. They result in an attitude in which quantity outweighs quality. Motivation of employees is the key to maximize the participation of many employees.

Fig. 10.1 (Continued)

second hypothesis namely that teachers believe the program will enforce the MBA mindset.

Finally, we have compared the development of attitudes of MBA alumni with alumni in a Master of Science program. We assumed that Master of Science students who enrol in business administration are motivated more by academic reasons in comparison to MBA-students and feel less attracted by financial reasons. Consequently, as a third hypothesis we expected that the mindset of MSc alumni develops into the opposite direction as their MBA colleagues.

10.5 A Comparison of Two Types of Alumni

10.5.1 Target Groups

Most of the participants in the Master of Science program of the Open University in the Netherlands are Dutch managers at the middle echelon or they occupy staff functions in public or business organisations.

Students study realistic problems, which they elaborate with the help of literature. Consequently, the examination focuses on application and problem solving instead of reproduction. Students do their thesis in communities. They enter the community as soon as they start with their thesis and, therefore, they learn a lot from fellow-students who have already made progress or are about to finishing their work (Lave & Wenger, 1991).

In order to answer the questions raised, a questionnaire was sent to 560 alumni (of 1,000 in total) whose e-mail address we had. One hundred and seventy five responded.

The Open University of the Netherlands has founded the EuroMBA in 1995. Nowadays, it is a consortium of five international business schools. The students are from more than 20 mostly European countries. Distance education is the main delivery mode. In addition, students participate in six residential weeks.

From the 80 alumni, 50 responded to the questionnaire.

10.5.2 Research Questions

The questionnaire comprised ten pairs of questions. The first question confronted students with two opinions concerning management issues. These opinions correspond with the ten "mindsets" described above. In Fig. 10.2, "B" corresponds with the "desired" mindset. The second question was whether the program has enforced the prevalent mindset or whether this mindset has remained unchanged. We did not inquire after students' mindset before the start of the program. We concentrated upon the relation between the program and its perceived influence on the prevalent mindset.

10.5.3 Results

For both groups, two core values were calculated:

- The adherence to B after following the program (in percentages)
- The increase in inherence to B compared with the increase in A (in percentages)

Figure10.3 shows the averages of the core values for both groups.

These figures indicate roughly that both groups reveal a considerable adherence to B after completing the program, in case the "proper mindsets" according to Mintzberg. However, the increase has been larger in the MBA group.

In Fig. 10.4, the answers to each question by both groups are positioned in a two dimensional space. The MBA answers are indicated in white ovals and the MSc answers in grey ovals. Each answer is characterized by two values:

1	The quality of managers appears from:	A	The decisions they take
		B	The opportunity they create for others to take decisions
2	In the first place, management has to take care of:	A	Shareholder value
		B	The balance between the interest of employees and shareholders
3	In case of internal problems, a qualified manager will focus primarily on:	A	Structure
		B	Culture
4	In the first place, entrepreneurship is revealed in:	A	Strategic planning
		B	Making good decisions
5	Taking into account environmental conditions are:	A	Political issues that have to be coped with
		B	Values, which will determine the vitality of a company in the long term
6	In order to maintain the competence of employees, a company in the first place has to:	A	Offer opportunities for training and study
		B	Enrich their experience
7	A qualified manager will consider in the first place:	A	The similarity with other companies
		B	The uniqueness of the own company
8	Management competencies develop primarily:	A	During education
		B	During practice
9	A management development program aims at:	A	Development of management skills
		B	Reflection on managerial practice
10	Improvement of productivity depends on:	A	Implementing performance indicators
		B	Increase motivation employees

Fig. 10.2 Overview of research questions

- The adherence to B (*x*-axis)
- The difference between the increase of B compared to the increase of A (*y*-axis).

Figure 10.4 reveals some interesting facts:

- The adherence to B exceeds the adherence to A nearly completely.

	Average Adherence to B	Average Increase B–Increase A
MBA Alumni	67 (SD = 19)	27 (SD = 17)
MSc Alumni	69 (SD = 15)	22 (SD = 18)

Fig. 10.3 Adherence to and increase in "desired mindsets"

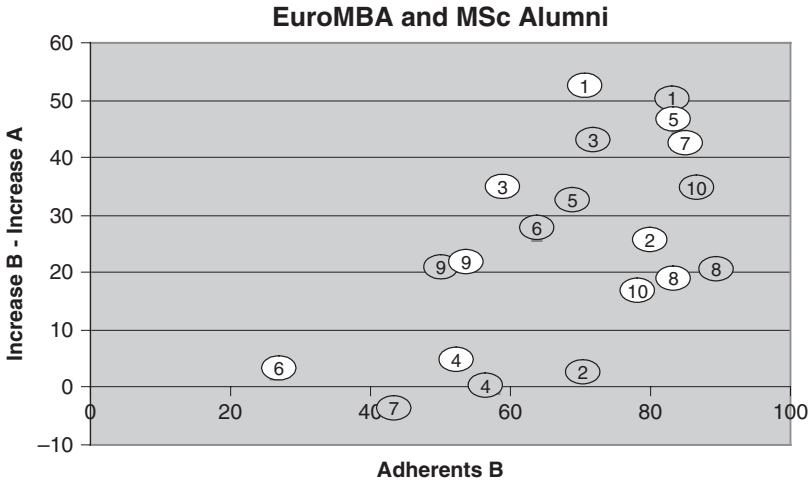

Fig. 10.4 Adherence to B and increase in adherence to B in relation to A

- In general, the increase of adherence to B is larger than the increase of adherence to A.
- The degree of increase differs considerably between the different items.
- Both target groups reveal similarity and difference as well.

We did some additional calculations, in order to enable conclusions with respect to the effect of the MBA program and the differences between the MBA program and the MSc program. In Fig. 10.5, the growth of the adherence of B (as compared to A) is indicated as Large (higher than average plus half of the standard deviation), Small (lower than the average minus half of the standard deviation), and as Average (the values in between).

The same values were calculated for each question concerning the MSc program.

We calculated for each question the physical distances between the dots that represent the MBA score and the MSc score. Distance indicates the consistency between the MBA and the MSc scores. For instance, in case of a large distance, both programs seem to generate reverse results.

The main teachers of the MBA program were interviewed in order to get information whether the influence of the educational program was intended or not. Six (of eight) teachers participated and we asked them to indicate, for each of the ten topics, whether the program will influence and in case of an affirmative answer, in which direction this influence will work out. Figure 10.5 indicates that the teachers expected in general a growth in mindset B. The answers are reduced to three values: Large, Average and Small influence. Only in one case, the teachers considered a small influence into the enforcement of A as most likely.

		MBA alumni		MSc alumni		Consistency	Teachers
		Increase B - A	Adherence to B	Increase B - A	Adherence to B		
1	Making versus facilitating decisions	L	A	L	L	L	A
2	Shareholder value versus stakeholder value	A	L	S	A	A	A
3	Structure versus culture	L	A	L	A	A	L
4	Strategy versus entrepreneurship	S	S	S	S	L	L
5	Environment as political issue versus core value	L	L	L	A	A	L
6	Development of competencies by training versus experiences	S	S	A	A	S	S (–)
7	Similarity versus uniqueness of companies	L	L	S	S	S	L
8	Role of education versus praxis in management development	A	L	A	L	L	S (+)
9	Management development: training skills versus reflection	A	S	A	S	L	S (+)
10	Role of performance indicators versus motivation	S	L	L	L	A	S (+)

Fig. 10.5 Influence of educational programs for separate topics for the MBA group and the MSc group

10.5.4 Discussion

The research described in this chapter aimed at illuminating some effects upon the mindset of students that enrolled in a MBA program or in a Master of Science program.

A preliminary question is about the legitimacy of attributing the observed changes to the courses of study that students took. Notwithstanding the fact that students attributed the observed changes to the program, changes in the general opinion with regard to issues as shareholder versus stakeholder value or to environmental issues might have influenced students' mindsets unconsciously. The occasionally large deviations between the expectations of the teachers and the changes reported by students indicate that extra curricular influences might be at stake. In reality, intra-curricular and extra-curricular influences are connected, especially if one views education as a process in which students develop their own meaning. Consequently, we persevere in assuming that the programs at least had a considerable influence in the development of students' mindsets.

In our research, we found evidence that the MSc programme (as we expected) had a positive impact on the development of a "desired mindset". The MBA program had an even larger impact. We found a reverse result of the impact that Mintzberg and others attribute to a MBA program. Moreover, one has to keep in mind that students in both groups have at least 4 years experience in (middle) management. Consequently, they no longer belong to what Mintzberg has called the "wrong people".

However, not all components of the "desired" mindset develop in the same degree and in the same direction. In addition, some differences between the MBA program and the MSc program became clear.

In case of topics 1 (Making or facilitating decisions), 3 (Structure versus culture) and 5 (Environment, political issue versus core value), both programs enforced the desired mindset considerably and the teachers more or less expected this effect.

In case of topic 7 (Similarity versus uniqueness) and to a lesser degree, 2 (Shareholder versus stakeholder value) the MBA program seems to enforce the desired mindset in contrast with the MSc program.

In the MSc program, most students believe that companies are more or less the same and according to them, the program has enforced this attitude. Most MBA students believe in the uniqueness of companies (desired mindset) and they agree that the program has enforced this attitude. MBA teachers themselves confirm the probability of the influence of the program into the desired direction. A probable explanation is the international character of the MBA program that stresses more than the MSc program the differences between parts of over the world and as a consequence, of its companies.

The MBA students that prefer a stakeholder approach ("desired mindset"; topic 2) outnumber their MSc colleagues, and the first group reveals a larger

growth than the second one as well. The MBA scores are in line with the expectation of the teachers. Probably, this topic has been discussed frequently in the MBA program.

With regard to the topics 8 (Role of education versus praxis) and 9 (Skills training versus reflection), the programme had a (moderate) influence on both groups, where the MBA teachers believe in the absence of such an influence. These topics relate to educational issues and the answers of students are based probably on their satisfaction with the learning outcomes of the program.

No influence of the program appeared in topic 4 (strategy formulation versus taking good decisions). This result was highly consistent with the outcomes of the MSc-group. However, the teachers strongly expected that the program would influence the mindset of students into the direction of taking good decisions (B). Mintzberg believes that management students strongly trust the possibility to base the policy of an organisation on strategic plans and rational calculations. They strongly adhere to this view because especially young students still have little experience with decision making in fuzzy circumstances, where intuition and insight are needed, and time to develop rational plans is lacking.

In topic 6 (Training versus experience) and topic 10 (Performance indicators versus Motivation), the program does not reveal much change in MBA students' attitudes. The difference between the groups is considerable.

Unlike MBA students, MSc students indicate that the program has enforced the belief that experience is a richer source of learning than training. Probably, the positive experience of MBA students with the relation between theory and praxis give them more trust in their educational value of their program than in case of MSc students. This is consistent with the teachers' opinions.

In topic 10, both groups strongly believe in the importance of motivation compared with performance indicators. In case of the MSc students, the program has enforced this belief in a larger degree than in case of MBA students. This is consistent with teachers' opinions.

10.6 Conclusion

Henri Mintzberg's famous dictum that "conventional MBA programs train the wrong people in the wrong ways with the wrong consequences" has been the trigger for the investigation we have described in this chapter. Among others, the development of a "MBA-mindset" is one of the wrong consequences ("pervasive effects"). We have identified ten components of this mindset, which are the results of interaction between MBA-education and a specific category of learners.

In general, our findings do not confirm the hypotheses based on Mintzberg's insights. The MBA students' mindset resembles the desired mindset more that

the opposite. The students rather unanimously indicate that the program has enforced the "desired" mindset. The differences between MBA students and MSc students are limited. In some respects, MBA students adhere even stronger to "desired mindsets" than MSc students. For instance, in case of the importance of stakeholder value (2) and in case of the necessity to look at differences between companies (7). In addition, they appear to be influenced by the program more than MSc-students. MSc-students in general are more sceptical about the role of education and training in the development of managerial competences. This observation is possibly related to the circumstance that MBA students opt for a MBA program in order to improve their management competencies. MSc-students usually have other motivations as well.

Our research allows only modest and careful conclusions. The differences between MBA students and MSc students are restricted and at least the Euro MBA teachers' expectations about the effect of the program generally are in line with the "desired" mindsets. In general but not over all, the effects of the program are in accordance with the expectations of the teachers.

Our research can contribute to a further clarification of the goals and expectations of MBA curricula. The results feed the conviction that MBA students might develop in business leaders who are capable to answer the challenges they will meet in a fast changing world.

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Chapter 11
The Role of Critical Thinking Skills in Students' Attitudes Toward Business Subjects

Dirk Tempelaar

11.1 Introduction

Critical thinking skills, also termed metacognition in educational literature, refers to students' abilities to predict their performances on various tasks and to monitor their current levels of mastery and understanding. Empirical studies demonstrate that students with higher levels of critical thinking skills achieve better learning results than peers with lower levels. In these studies, critical thinking skills are either directly related to the outcomes of learning processes or to variables that measure the quality of the learning. Examples of the latter are cognitive learning strategies chosen by students, such as taking a deep or a surface approach to learning. Besides cognitive factors, affective factors play an important role in the learning process. Affective factors related to the characteristics of the subject to be learned are indicated as students' attitudes toward academic subjects or their subject specific achievement motivations.

In this study, we investigate the relationship between these two important determinants of the learning process: what is the role of the cognitive factor 'level of critical reasoning skills' in the explanation of the affective factor 'students' subject specific achievement motivations', for a range of different academic subjects? Students participating in this empirical research are first year students of an undergraduate Business program. We focus on the subjects Business Mathematics, Business Statistics, Organisational theory, and Marketing. Both critical thinking and achievement motivations are measured by self-report instruments. Critical thinking skills or metacognitive abilities are measured by AILI or 'Awareness of Independent Learning Inventory' (Elshout-Mohr et al., 2005). AILI distinguishes three main categories within metacognition: metacognitive knowledge, metacognitive skills, and metacognitive attitude. Students' subject specific achievement motivations are measured by an instrument based on the SATS or 'Survey of Attitudes Toward Statistics'. This instrument, grounded in the expectancy-value theory of achievement motivation, is adapted to make it

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suitable for a range of Business subjects (Tempelaar, Gijselaers, Schim van der Loeff, & Nijhuis, 2007). The SATS distinguishes six subject-specific attitudes: affect, cognitive competence, difficulty, value, interest, and effort.

Both AILI and SATS generate observations that are at best approximations of underlying theoretical constructs. The appropriate way to model data of this kind is to adopt a latent variable approach. Therefore, the relationship between generic metacognitive skills and subject specific achievement motivations is investigated using structural equation modelling. Models appear to be very stable over the several subjects, and indicate that metacognitive knowledge appears to be the main determinant of students' interest and effort, whereas metacognitive skills determine primarily affect and cognitive competence, and metacognitive attitude explains value and difficulty. Relationships between metacognition and course performances are stable, but modest in size. In contrast, relationships between achievement motivations and course performances are much stronger, especially for hard subjects Mathematics and Statistics. Some of these relationships contain a somewhat anomalistic element: achievement motivations for Mathematics are better predictors for students' performances in Business oriented subjects Organisational theory and Marketing, than students' achievement motivations for these subjects themselves. Implications of the outcomes of this study for instructional practices will be discussed.

11.2 Methods and Participants of This Study

11.2.1 The Awareness of Independent Learning Inventory or AILI Instrument

The AILI is based on Flavells' three-component model of metacognition, which decomposes metacognition into the components knowledge, skills, and attitudes, or responsiveness (Flavell, 1979). Incorporation of the attitudes component makes the AILI unique; other instruments, e.g. the MAI are limited to the components knowledge and skills. Each component is further divided into three subcomponents. For metacognitive knowledge, these subcomponents are based on the types of knowledge identified by Flavell (1979): about persons, about strategies, and about study tasks. For metacognitive skills, subcomponents correspond to the three consecutive stages of a learning episode: the preparatory, the executive, and the concluding stage (Van Hout-Wolters, 2000). For metacognitive attitudes or responsiveness, subcomponents are again based on Flavell (1979): sensitivity to internal feedback, to external feedback, and curiosity. In the construction of AILI, a so-called facet procedure has been followed. This design implies that, in addition to referring to a specific metacognitive component and subcomponent, every item refers to one of five content domains defined as the second facet: Learning goal, Emotional interest, Collaborative learning, Deep understanding, and Orderliness/Systematic

Table 11.1 Facet design of AILI with sample items for all subcomponents

First facet: components and subcomponents of metacognition

K: Metacognitive Knowledge
- K1: in the person category: *I think it's important to thoroughly explore all the opportunities offered by the programme*
- K2: about strategies: *When the cooperation between students turns out to be unproductive I don't know any ways to solve this*
- K3: about study tasks: *I can't tell from a text how much effort it will take for students to understand it*

R: Metacognitive Skills:
- R1: orientation on one's own functioning in a learning episode: *Before I begin an assignment I don't think about how I will introduce structure in it*
- R2: monitoring one's execution of a learning episode: *When I work together with others I regularly think about what I learn from them*
- R3: evaluation of one's own functioning in a learning episode: *I find it helpful to talk with others about how one can gain an understanding of the texts to be studied*

O: Metacognitive Attitudes or responsiveness:
- O1: sensitivity to metacognitive experiences (internal feedback during learning): *I sometimes get a sudden feeling that my method of work doesn't suit the assignment*
- O2: sensitivity to external feedback on one's cognitive functioning: *I find it helpful to talk with others about how one can gain an understanding of the texts to be studied*
- O3: curiosity with respect to one's own cognitive functioning and development: *I am not interested in why I have an aversion to some of the texts I have to study*

Second facet: content domains

T: Topics of concern to learners in Higher Education
- T1. Learning Goal
- T2. Emotional Interest
- T3. Collaborative learning
- T4. Deep understanding

approach (Elshout-Mohr et al., 2007). Table 11.1 provides a complete overview of the facet design and includes sample items for all subcomponents.

Elshout-Mohr et al. (2007) report the reliability and validity of the AILI instrument to be of appropriate level. Validity is investigated in two respects, both internal and external, where the latter is based on the correspondence with the metacognitive scales in the MSLQ instrument.

Being a good critical thinker, even in the confined sense of the measurement being based on self-perception, appears to have a favourable impact on learning in a business program. In Tempelaar (2006), the relationships are investigated between students' metacognitive abilities, as measured through AILI, and students' performances in a portfolio of assessment instruments over a range of subjects. One of the conclusions of that study is that self-perceived critical thinking has a consistent but modest impact on course performances, with metacognitive attitudes being the best predictor, and performances in hard subjects being somewhat better predicted than performances in the behavioural sciences based subjects.

Questionnaires were electronically administered using a 7-point, Likert-type scale ranging from 'not true of me at all/never' through 'don't know/neutral' to 'completely true of me/always'.

11.2.2 SATS: Survey of Attitudes Toward Statistics

Expectancy-value based models for achievement motivations originate from work by Atkinson and became well-known by the work of Eccles and co-authors (Eccles, 2005; Eccles et al., 1983; Wigfield & Eccles, 2000, 2002; Wigfield, Tonk, & Eccles, 2004). In their review article on the role of such motivational variables on learning in the statistical domain, Gal and Garfield (1997) distinguish several reasons to take affective factors into account. Attitudes and beliefs about the domain influence the learning and teaching, and the willingness of students to enrol in elective courses.

In the present study, achievement motivations are operationalized by adopting a version of the expectancy-value model that incorporates an affective construct, developed by Schau and co-authors (Schau, Stevens, Dauphinee, and Del Vecchio, 1995). Schau's expectancy-value model contains four constructs. The first two expectancy factors deal with students' beliefs about their own ability and perceived task difficulty: Cognitive Competence and Difficulty. The third construct is the subjective task-value: Value. Together, these three constructs constitute the modern expectancy-value model (Wigfield & Eccles, 2000, 2002). In addition to task-value, Schau and co-authors introduce a second task-related attitude: Affect. The explicit introduction of the affective component is motivated by the vast evidence of the role of such affective factors in learning in Mathematics-related domains. Further factors distinguished in the current model are Effort and Interest Table 11.2 provides an overview of the six scales, and includes a positively and negatively phrased sample item for each.

Table 11.2 Scales and sample items of the SATS

Affect (six items) – measuring positive and negative feeling concerning Statistics, the enjoyment aspect of intrinsic value: *I like Statistics*; *I am scared by Statistics*
Cognitive Competence (six items) – measuring attitudes about intellectual knowledge and skills when applied to Statistics, the self-concept of one's ability component in the expectancy-value model: *I can learn Statistics*; *I have no idea of what's going on in Statistics*
Value (nine items) – measuring attitudes about the usefulness, relevance, and worth of Statistics in personal and professional life, the utility and attainment components of task value: *I use Statistics in my everyday life*; *I will have no application for Statistics in my profession*
Difficulty (seven items) – measuring attitudes about the difficulty of Statistics as a subject, the perception of the task demand: *Statistics formulas are easy to understand*; *Statistics is highly technical*
Interest (four items) – students' level of individual interest in Statistics, the interest aspect of intrinsic value: *I am interested in learning Statistics*
Effort (four items) – amount of work the student expends to learn Statistics, the perceived cost component of task value: *I plan to work hard in my Statistics course*

In their study on the role of subject specific achievement motivations in learning in a Business program, Tempelaar et al. (2007) have adapted the SATS instrument from the statistical domain to a range of Business oriented subjects. The adapted instrument is demonstrated to provide a valid description, both from internal and external perspectives, of subject specific achievement motivations. In addition, the instruments' reliability is of appropriate level. In this study, we will investigate motivations measured with the adapted SATS instrument in four different subjects: Mathematics, Statistics, Organisational theory, and Marketing. Questionnaires were administered in the same way as the AILI instrument.

11.2.3 Design of This Study

The empirical part of this study reports on data obtained from 729 students participating in the 2004/2005 first year undergraduate programs International Business Studies and International Economics of Maastricht University. Both programs are designed according the problem-based learning method. Students experience training in metacognitive skills in the first week of their program. In the same period, the AILI is administered. Two weeks before participating in the final exam, the adapted SATS questionnaires are administered. Subsequently, course performances of these students are obtained for the two parallel, integrated courses in the first half semester. Those two courses consist of Quantitative Methods, integrating Mathematics and Statistics, and Management, integrating Organisational theory and Marketing. Course performance measures consist of partial scores in the final exam of Quantitative Methods course (Math score, and Statistics score), partial scores in the final exam of management (multiple choice items for all topics, open questions for Organisational theory, and open questions for Marketing), and quiz scores for Math and Statistics, produced by three intermediate quizzes.

Part of the empirical analysis regards the relationship between metacognition, subject motivations and type of subject. Subjects and related course performances are classified in two broad categories: Business education core courses, and Mathematics oriented service courses. These two categories can be labelled as hard and soft, but also as pure and applied, or non-life and life. These latter labels stem from the Biglan taxonomy of academic subjects (Burke & Moore, 2003). Differences in the relationship between the two categories in terms of metacognition and course performance, thus allow for an interpretation of the impact of applied and life-aspects of subjects.

11.2.4 Statistical Analysis

As a first step in the analysis, items from the motivation self-report instruments were parcelled. The technique of item parcelling, where items from the same

subscale are aggregated into several parcels or mini-scales, has been adopted in empirical studies for several reasons including: (a) obtaining more continuous and normally distributed observed data; (b) reducing the number of model parameters to achieve a more attractive variable to sample size ratio; and (c) estimating stable parameters (Hau & Marsh, 2004). In our study, the size of the model relative to the sample size necessitates in itself the parcelling step in the estimation of the factor model of subject motivations. As a preliminary step, it has been assured that all scales or subscales are uni-dimensional.

In parcelling items, Hau and Marsh (2004) advise to counterbalance skewness in the case of strong non-normality by creating parcels out of item pairs with opposite skew. As a preliminary step to parcelling, the degree of non-normality of the data was determined. In the motivations data, most items fall in Hau and Marsh's category of 'moderately non-normal', implying skew = 1.0 and kurtosis = 1.5; some items, especially related to effort, have somewhat stronger non-normality. In addition, all scales satisfy the typical pattern of self-report data described by Hau and Marsh of being slightly negatively skewed, except for the Difficulty items in the hard subjects Math and Statistics, which are positively skewed. A counterbalancing parcelling scheme was adopted, but since most items have skewness and kurtosis of same direction, the extent of counterbalancing achieved by this scheme is limited.

Models used in this study are of CFA (confirmatory factor analysis) or SEM (structural equation modelling) type. The CFA models do allow for correlated traits. In the subject-specific models, trait correlations represent the associations amongst different facets of the achievement motivations, and amongst different facets of metacognition. In the multiple-subjects model, trait correlations represent in addition to these factors, associations of similar achievement motivation factors for different subjects. Models were estimated with LISREL (version 8.72) using maximum likelihood estimation.

11.3 Statistical Results

11.3.1 Descriptive Statistics of the Data

Students do regard themselves as critical thinkers, be it that their self assessment are not outspoken. After aggregating subscales into scales, means (and standard deviations) of the aggregated metacognitive components are: Knowledge: 4.9 (0.63); Skills: 4.9 (0.75); and Attitude: 5.2 (0.66). Figure. 11.1 depicts the distributions of each the three scales by means of boxplots. Distributions are rather symmetric around mean values clearly exceeding the neutral value of 4 of the 1–7 Likert scale. Student assess their metacognitive attitudes as somewhat more positive than their knowledge and skills, and since spread is limited, the great majority of students score above neutral on all three scales.

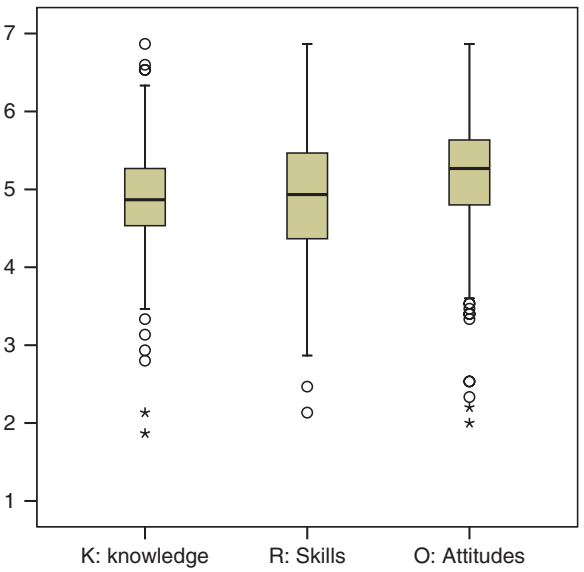

Fig. 11.1 Distribution of metacognitive scales: knowledge, skills, and attitudes, respectively

Descriptive Statistics of the motivational data is depicted in Table 11.3, with the boxplots of the two scales Affect and Effort displayed in Fig. 11.2 Out of six motivational scales, these two were selected for producing graphs, since they express the two distinct patterns available in the data most clearly.

The first pattern, present in all motivational variables except Effort, is the divide between the distributions of scales in the two, mathematical oriented subjects Mathematics and Statistics, and the two behavioural based subjects Organisational theory and Marketing. This classification, which will be addressed as hard versus soft subjects for brevity, proves to be meaningful, since hard subjects distinguish clearly from soft subjects in terms of less favourable students' motivations. Only learning effort does not distinguish that profoundly between hard and soft, be it that variation tend to be larger in hard subjects than in soft subjects (*see* Fig. 11.2, second panel).

As with critical thinking, students' self-perceptions of learning motivations is positioned on the positive side of the scale, with one obvious exception: students perceive the hard subjects Math and Statistics to be difficult, as expressed by scale means clearly below the neutral level of 4 (*see* Table 11.3). Beyond the

Table 11.3 Means (standard deviations) of six achievement motivations scales for four subjects

	Mathematics	Statistics	Organisation	Marketing
Affect	4.1 (1.51)	4.5 (1.29)	5.7 (0.84)	5.6 (0.91)
Cognitive competence	4.5 (1.32)	4.9 (1.06)	6.0 (0.67)	6.0 (0.71)
Value	4.8 (1.14)	5.0 (0.95)	5.8 (0.72)	5.7 (0.76)
Difficulty (lack of)	2.6 (0.81)	3.1 (0.88)	4.5 (0.73)	4.5 (0.74)
Interest	4.6 (1.51)	4.8 (1.26)	6.0 (0.81)	5.9 (0.89)
Effort	5.8 (0.95)	5.9 (0.91)	6.0 (0.77)	6.1 (0.77)

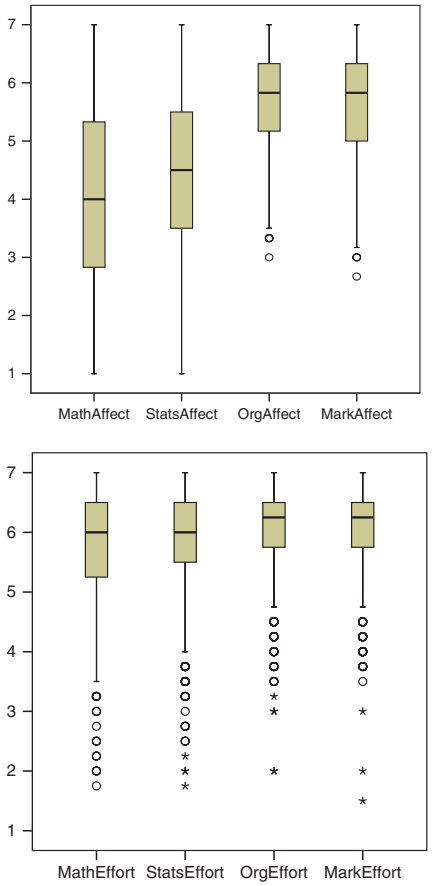

Fig. 11.2 Distribution of motivational scales affect and effort in four subjects: Mathematics, Statistics, Organisational theory, and Marketing, respectively

tendency of perceiving those two hard courses as much more difficult than the soft courses, students are rather univocal in their perceptions: for the hard subjects, variation in Difficulty score is lower than variation in any other motivational variable.

The third set of measured constructs relates course performances in the range of subjects under study. Since univariate distributions of course performance variables depend strongly on procedural aspects of testing students, our prime interest is not in these distributions, but in the relationships between course performance indicators and students' self-perceptions in metacognitive and motivational facets. Table 11.4 contains correlations between seven course performance indicators and, organized along the rows of the table, the three metacognitive factors, the six motivations for the same subject, and the six motivations for Mathematics.

The first three rows of Table 11.4 indicate that metacognitive knowledge (K), skills (R), and attitudes (O), all have a consistent but modest impact on the several course performance indicators: correlations fluctuate between .11 and .20. Rows

Table 11.4 Corrleations between course performance indicators and self-perceptions of metacognition, achievement motivations for the same subject, and achievement motivations for Mathematics, being significantly different from zero at .01 level

	Math exam	Math quiz	Stats exam	Stats quiz	Multiple choice	Organization	Marketing
K	.16	.14	.11	.11	.17	.14	.13
R	.20	.18	.12	.16	.17	.13	.13
O	.17	.20	.13	.15	.17	.13	1.3
Affect	.46	.38	.36	.41	–	–	–
CognC	.48	.39	.36	.41	–/–	–	–
Value	.25	.22	.23	.25	.18/-	.11	.14
Diffict	.24	.22	.15	.18	–/–	–	–
Interest	.36	.29	.32	.34	–/–	–	–
Effort	.30	.27	.27	.33	.13/.11	–	.12
M-Affect			.25	.28	.18	.17	.13
M-CognC			.23	.28	.20	.20	.17
M-Value			.17	.17	.19	.17	.16
M-Diffict			–	.11	–	–	–
M-Interest			.25	.22	.20	.16	.12
M-Effort			.26	.29	.23	.20	.18

four to nine indicate that in the hard subjects, subject motivations have a strong impact on performance indicators for the same subjects, with correlations up to .48. However, these correlations vanish for the soft subjects, except for the variable Value. Since the multiple choice course performance covers two subjects, correlations in that column are calculated with two sets of motivational variables, to know Organisational theory and Marketing, of which only the correlations with perceived value and perceived effort differ significantly from zero.

The last six rows of Table 11.4 contain correlations of course performance in Statistics, Organisational theory, and Marketing, with motivations for Mathematics. Whereas for Statistics, motivations for Statistics itself are better predictors than motivations for Mathematics, this is not true for the soft subjects. In the subjects Organisational theory and Marketing, course performance is better predicted by Math achievement motivations, than by motivations for the subject itself! Only perceived difficulty has no predictive power, irrespective if it refers to Mathematics, or to the subject itself.

11.3.2 Measurement Models of Metacognitive Factors, Subject Specific Motivations, and Course Performance

Measurement models for metacognitive factors, for subject specific achievement motivations, and for course performance, are all confirmatory factor models which allow the latent factors to be correlated. Fit of all these factor models is adequate. No separate graphs of these factors models are included, but all models are contained in the structural equation models discussed in the

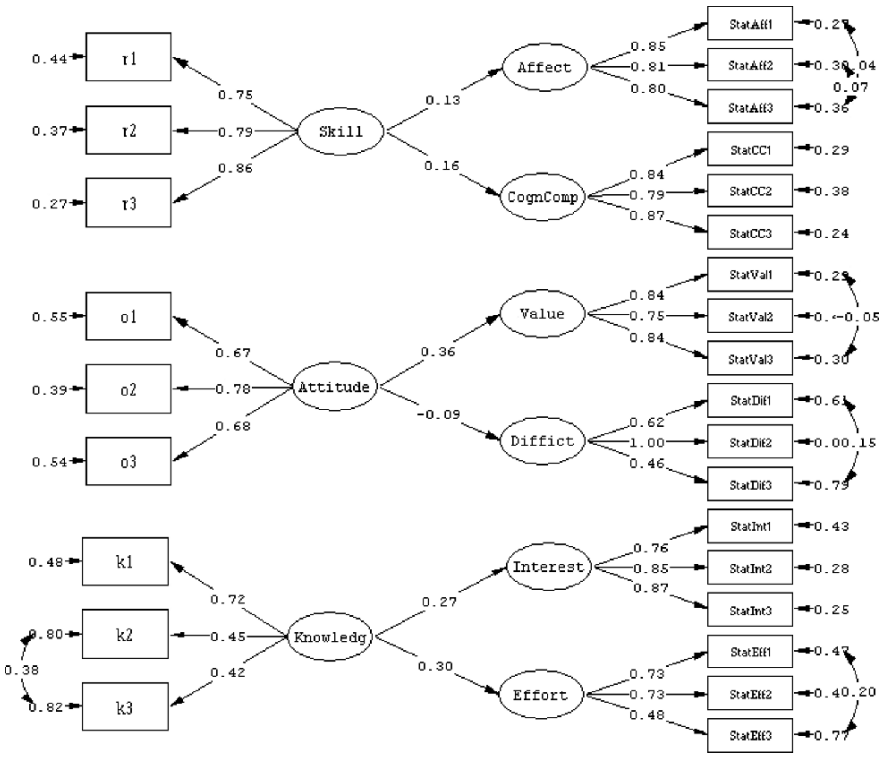

Fig. 11.3 Metacognition explaining attitudes toward Business Statistics

subsequent subsection. Therefore, the left hand side of both Figs. 11.3 and 11.4 graph the measurement model of the metacognitive factors. In Fig. 11.3, factor loadings and indicators are made explicit, whereas Fig. 11.4, focusing on the structural part of the model, demonstrates the strong correlations between the three latent metacognitive factors. Measurement models of achievement motivations are depicted in the right hand sides of Figs. 11.3 and 11.4. In Fig. 11.3, the measurement model is provided for the subject Statistics, making indicators and factor loadings explicit. The right hand part of Fig. 11.4 depicts the measurement model of all subject motivations modeled simultaneously, including latent factor correlations. The very last part of Fig. 11.4 contains the measurement model of course performances, when once again all course performance variables are modeled simultaneously, and two latent course performance factors are hypothesized: performance in hard subjects, and performance in soft subjects.

Most interesting part of the measurement models for subject motivations are the correlation matrices of latent motivation factors. Table 11.5 contains these correlations for all four academic subjects. Several issues come up. The first issue is the effect is of disentangling the broad task value concept into three separate concepts: Affect, related to liking the subject, Value, related to the importance

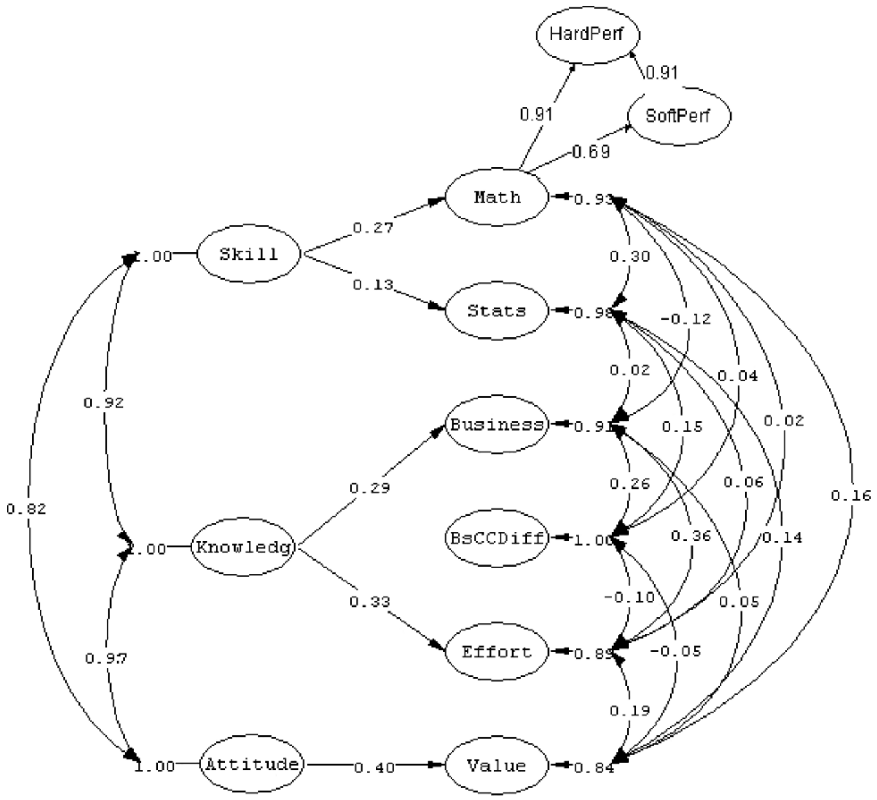

Fig. 11.4 Metacognitive factors explaining subject motivations and performance simultaneously

Table 11.5 Correlations between latent achievement motivations factors based on Eccles' measurement models of the four subjects Mathematics/Statistics/Organisational theory/Marketing respectively; '–': non-significant at 5% level

	1.	2.	3.	4.	5.	6.
1. Affect	1.00					
2. Cognitive competence	.94/.93 .81/.81	1.00				
3. Value	.57/.49 .53/.59	.56/.50 .51/.56	1.00			
4. Difficulty (lack of)	.62/.57 .40/.44	66/.62 .49/.53	.28/.19 –/–	1.00		
5. Interest	.76/.65 .66/.70	.70/.60 .57/.57	.77/.75 .78/.80	.37/.27 –/–	1.00	
6. Effort	.28/.36 .36/.35	.28/.33 .32/31	.33/.38 .47/.44	–/.13 –/–	.44/.51 .58/49	1.00

attached to the subject, and Interest. For all subject-matter areas, the correlation between latent factors Affect, Value, and Interest is, relative to other correlations, modest, and nowhere the highest. This indicates that Affect, Value, and Interest are clearly empirically distinguishable constructs. For any given subject-matter area, the correlation between Value and Difficulty (lack of perceived) is weak, indicating that in all subject-matter areas the attached value is relatively independent of the lack of perceived difficulty. For the soft subject-matter areas, the correlation even completely vanishes: Value and Difficulty are independent in the statistical sense. For the hard subject-matter areas, there is still, be it very modest, a relationship between the two constructs. Those subjects are somewhat better valued by students who regard the subject-matter as attainable. A similar hard – soft divide is in the correlation between Interest and (lack of) Difficulty: being absent in soft subjects, this correlation has moderate positive values in the hard subjects. A last observation refers the correlation between Affect and Cognitive Competence. For all subject-matter areas, this is by far the largest correlation. This is in itself a remarkable fact: Affect is achieved by decomposing the task value component into affective and utility-related factors, but from this analysis it appears that Affect is stronger related to the expectancy component Cognitive Competence than to Value. This once again confirms the usefulness of the affect inclusion in the expectancy-value model. In contrasting hard and soft subject-matter areas, it is evident that the correlation is much stronger in hard subject-matter areas than in soft. For hard subjects, we find an average correlation of 0.93. For soft subject-matter areas, the liking the subject is more loosely coupled to the confidence in one's performance, than in hard subjects.

Modelling all subject motivations simultaneously, the six factor model depicted in the right hand side of Fig. 11.4 emerges. The model demonstrates two different hierarchical effects. The factors Effort and Value are robust over all subjects: Effort loads on all subject-specific Effort parcels, and Value loads on all subject-specific Value parcels, plus the Interest parcels of the two hard subjects Math and Statistics. A different type of a hierarchic effect is found in the factors Math and Stats, both having loadings on all corresponding subject specific parcels for all motivations, except for Effort parcels. The remaining two factors represent a mixture of both motivation and subject hierarchy: the two soft subjects Organisational theory and Marketing shape two factors that combine corresponding motivations. BsCCDiff has all Cognitive competence and Difficulty parcels of the two subjects as its loading. The factor Business is constituted of all soft subject motivation parcels, except for Effort and Difficulty. Latent factors are weakly to moderately correlated: see Fig. 11.4. The strongest correlations are between the two hard subject factors Math and Stats, the two soft subject factors Business and BsCCDiff, Value and Effort, and Business and Effort.

A last remark relates the measurement model of course performances. Both latent factors, representing performance in the Mathematics oriented subjects and that in the behavioural subjects, are strongly correlated, indicating that

although subjects are very different in nature, scores students achieve in the several sections of the exam are not.

11.3.3 Structural Equation Models of Metacognitive Factors, Subject Specific Motivations, and Course Performance

After establishing adequate fit of measurement models, the subsequent step is the investigation of the relationships between latent factors through the estimation of structural equation models. First, subject specific structural models are estimated for each of the four subjects Mathematics, Statistics, Organisational theory, and Marketing. Figure. 11.3 provides a graphical representation of one of these four models: Statistics.

Table 11.6 provides the estimates of the structural parts of all four models: the standardized values of the path coefficients. The pattern of significant path coefficients is very stable over subjects. In all subjects, metacognitive skills is the only predictor of both Affect and Cognitive competence. Metacognitive attitude predicts Value in all subjects, and, be it very weakly, Difficulty in Statistics. Lastly, Metacognitive knowledge predicts Interest and Effort. Path coefficients demonstrate little variability over subjects, with the exception of the path between metacognitive skills and subject specific Affect being somewhat stronger in soft subjects than in hard subjects. The motivational variable Difficulty is unrelated to metacognition except for a very weak relationship for Statistics: students being high in metacognitive attitude, regard Statistics as somewhat more difficult than other students.

The estimation of a structural equation model when all subject motivations are integrated into one model is depicted in Fig. 11.4. The pattern is very similar to the subject specific models. The hierarchic factors Math and Stats are best predicted by metacognitive skills. Effort is predicted by metacognitive knowledge, as is the mixed factor Business, whereas metacognitive attitude predicts Value. In agreement with the correlations reported in Subsection 11.3.1, the latent motivational factor Math is the single predictor of all course performance, be it for soft or hard subjects.

Table 11.6 Standardized estimates of path coefficients from metacognition to subject motivations where significant at the .05 level

	Organisation	Marketing	Mathematics	Statistics
Skill → Affect	0.29	0.23	0.19	0.13
Skill → Cognitive Competence	0.21	0.20	0.23	0.16
Attitude → Value	0.36	0.33	0.32	0.36
Attitude → Difficulty	–	–	–	–0.09
Knowledge → Interest	0.29	0.21	0.29	0.27
Knowledge → Effort	0.27	0.29	0.23	0.30

11.4 Conclusions and Implications

This contribution reports on the relationships between critical thinking skills (or metacognition), subject specific achievement motivations (or attitudes toward subjects), and course performances in these subjects. Between these three groups of constructs, two very stable sets of relationships seem to exist. First, the direct relationships between metacognitive constructs and course performances, as documented in Table 11.4 in terms of correlations, is very stable over subjects and types of assessments. Students with better metacognitive knowledge, better metacognitive skills, and better metacognitive attitudes, outperform other students, be it that the difference is modest in size. The other stable relationships are between metacognitive constructs, and subject specific achievement motivations. Those relationships are expressed in Table 11.6 and Fig. 11.3. Once again, variation over subjects as made visible by paths being significant and standardized estimates of those paths is very limited. In fact, path structure (what metacognitive factors best predict what motivational constructs) is invariant over subjects, and path coefficients are all of same size.

However, the third type of relationships, the one between subject specific achievement motivations and course performances, is very different in nature. As Table 11.4 indicates, those relationships are strong for the hard subjects Mathematics and Statistics, but nearly disappear for the soft subjects Organisational theory and Marketing, as long as we restrict our models to motivational constructs related to these soft subjects themselves. The lack of invariance of this relationship over subjects has its implications for the indirect relationships between metacognitive factors and course performances. For the hard subjects, the weak direct relationship between metacognitive factors and course performance is strengthened by an indirect relationship through achievement motivations, which in size clearly exceeds the direct relationship. In the soft subjects, due to the lack of a relationship between achievement motivations and course performances, such an indirect relationship breaks down.

The picture of the relationships for soft subjects changes, when we allow attitudes toward hard subjects to enter the scene. These attitudes, or more specifically the Mathematics related motivational factors, much better predict course performance in Organisational theory and Marketing, than the motivational factors related to these subjects themselves. Replacing soft subject attitudes by Mathematics related attitudes, the indirect relationship between metacognition and soft course performance reappears, be it that the relationship is still less strong than for the hard subjects.

These somewhat counter-intuitive modelling outcomes raise important questions. Why is it that in learning behavioural oriented subjects as Organisational theory and Marketing, students' motivations for these subjects are hardly relevant, but students motivations for Mathematics are? Most contemporary educational theories state that education should be directed at reaching both cognitive and affective aims. In student-centred educational systems such as

problem-based learning, where students have prime responsibility for their own learning process, it is vital to strive for proper attitudes, for students being highly motivated. But does the outcome of this study imply that this job has become much easier than we thought before? Can we focus on just one set of students' motivations, those for Mathematics, and legitimized go by all other subject specific motivations? Further research in subject specific achievement motivations and their relationships to course performances will be needed to be able to provide answers to these crucial questions.

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Chapter 12
A Strategy for Business Education in a Changing World

A Theoretical and Empirical Analysis of Key Strategic Decisions in 25 Business Schools

Herman van den Bosch

12.1 Introduction

Bridging the gap between theory and practice has been a major topic within educational innovation during the last decades (Babüroglu & Emery, 2000; Boyatzis, Cowen & Kolb, 1995; Eraut, 2003). Problem-based and project-oriented learning have claimed to be major tools to reach this goal. Consequently, many schools have adopted these tools, often after a considerable degree of customisation (Barrows & Tamblyn, 1980; Gijselaers & Wilkerson, 1996; Kjearsdam & Enemark, 1994; Savery & Duffy, 1996; Van den Bosch & Kieft, 2001). Research into the effects of these changes has generally revealed positive outcomes. Students outweigh their colleagues in lecture-based teaching concerning the application of knowledge and the development of communication skills.

However, the educational innovations in business education have not deflected the growing criticism of business education in general. This criticism focuses on the inadequacy of business education from the viewpoint of the current needs of organizations and of society.

The main point is that the change of the educational model (for instance the implementation of a problem-based curriculum) is a tactical decision. Decisions with regard to the identity of the program (for instance the choice of the competencies aimed at or the resulting societal effects) are strategic. Strategic decisions are often implicit. This aim of this article is to make strategic decision-making concerning business education explicit.

This article has three parts. The first part is an inventory of the criticism of business education. Starting point is Mintzberg's thorough criticism of conventional MBA-programs. However, the introduction of the system, of which business education, business practice, business sciences and institutional conditions are parts, will broaden Mintzberg's vision. The growing dynamics of societal developments at global level speed up the change in this system.

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The second part discusses six strategic options for radical changes in business education. These changes aim at the development of leaders who are able to cope with present and future challenges with respect to profitability, sustainability and human resources.

In the third part is an empirical analysis of the policy of 25 business schools with regard to the six strategic options. The actual situation is compared with expected developments in the near future.

12.2 What Is Wrong with Business Education, Business Science and Business Practice Triangle

CEOs who fiddled financial statements are generally considered as either mercenary and deprived of social responsibility or as victims from tunnel vision or mania. With Henry Mintzberg's thought provoking book 'Managers not MBAs' in mind the question rises whether mismanagement is not an anomaly, but inherent in the whole system of which business education, business science and business organization are a part.

The first part of the article reveals the massive criticism at business education, business science and business practice. At the same time, firms have difficulties to deal with unpredictable and wicked problems arising from increasing globalisation. In addition, national governments share their part in the problem. Each of the next sections will be devoted to one of the four components of the problem as a whole (Fig. 12.1).

12.2.1 Business Education

Henry Mintzberg has been criticizing business education from the early seventies in the former century (Mintzberg, 1973) and he definitely is not standing

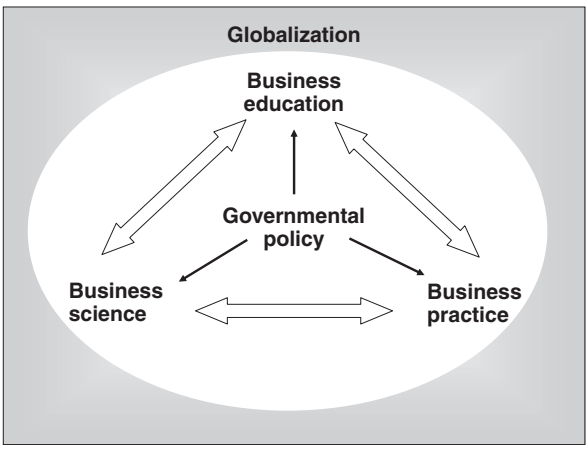

Fig. 12.1 The business education, business science and business practice triangle

alone. This article will confine itself to a brief explanation of his by now widely cited statement "conventional MBA programs train the wrong people in the wrong ways with the wrong consequences".

Why wrong people? Mintzberg considers management as "a good deal of craft with a certain amount of art and some science". The job is above all practice and consequently learning is only possible in practice. In our view the difference between all kinds of professional education is gradual. Consequently, management education might learn from professional schools in law, teaching and medicine (Bennis & O'Toole, 2005; Cabreta & Bowen, 2005; Khurana, Nohria, & Penrice, 2005).

Mintzberg loathes institutions that offer MBA degrees to persons with none or limited management experience. Programs like these happen to be the 'cash cows' of many – especially less distinguished – business schools. Experienced managers can learn a lot, but fulltime programs deprive these people from their primary source of learning, their job.

Selection of business schools students cannot take place by scrutinizing their experience. Therefore, schools have to rely on testing, for example the GMAT and on self-selection. The former leads to an emphasis on analytical skills in contrast with empathic skills. The latter leads to an over representation of achievers' exploitation-oriented and mercenary characters.

Why wrong ways? The traditional 'business functions' are over-represented in the curriculum. This is mainly due to the classical departmental structure of business schools. Students gather fragmented knowledge and there is insufficient room for integration. Bennis and O'Toole regret the 'academic drift' of business education that results in the first place from the professor's academic affiliations and aspirations (Bennis & O'Toole, 2005). This is even worse because of the reductionist and instrumental characteristics of many scientific publications, which further contribute to the fragmented view students develop (Bennis & O'Toole, 2005; Grey & Mitev, 2004; Welsh & Lewis, 2004).

Why wrong consequences? According to Mintzberg, MBA-programs contribute to a "pervasive corruption from education through management to organizations and into society". Students acquire a narrow vision on management competences. In 2002, the Aspen Institute published a report called "Where will they lead". The conclusion of this report is that MBA-students have a shift in priorities during the 2 years of business school from customer needs and product quality to the importance of shareholder value. On the other hand, experienced managers tend to change their thinking in the other direction.

According to Mintzberg's own research, MBA alumni are only moderately successful and they certainly do not outperform CEO's through a different background, as university bachelors or alumni from other disciplines. Other sources provide additional evidence (Pfeffer & Fong, 2002).

The worldwide and voluminous export of MBA-programs is another corruptive effect. "Many programs are pre-packaged portfolios of management courses based on the work of American academic and practitioner "management gurus"

such as Michael Porter, Rosabeth Moss Kanter and Tom Peters or, even worse, uncritical and decontextualised presentations of Western managerial fads and fashions" (Howe & Martin, 1998). In a thought-provoking article Monika Kostera, professor in the Leon Kozminsky Academy of Entrepreneurship and Management in Warsaw, compares the worldwide diffusion of MBAs with the crusades. The missionaries of management are pouring into Eastern Europe and annihilate the local social and economic fabric of artefacts and relations (Kostera, 1995).

Empirical research proves that Mintzberg is in the right, at least partially. Only after their graduation, students start to learn how to solve fuzzy business problems correctly and it takes 10 years of practice to become an expert. This is because of the acquisition of dynamic knowledge, in contrast to the declarative knowledge that students learn at the university. In the years before graduation students demonstrate an increase in partially correct solutions and a decrease in false solutions (Gijselaers, Arts, Boshuizen, & Segers, 2006).

The main criticism against Mintzberg and his like-minded colleagues is the degree of generalization. Many business schools already have changed their curricula and these schools are introducing educational innovations that emphasise integration, application, and reflection, however without stopping the enrolment of inexperienced students in their full-time programs. Mintzberg's massive criticism has been received better that he himself expected.

12.2.2 Business Sciences

Pedagogy and scientific identity cannot be isolated. A false, or at least one sided, understanding of management has intruded in the classrooms, due to the dominant scientific approach. The dominant view of science as the quest for general principles is mirrored in the view of management as behavior according to scientifically based general principles (Bennis & O'Toole, 2005).

Business sciences profess an excessive truth claim that results from the misplaced application of scientific principles in combination with an ideologically funded 'gloomy' worldview based upon self-interest and the absence of moral principles. Consequently "our theories and ideas have done much to strengthen the management practices that we are all now so loudly condemning (Ghoshal, 2005)".

Views on the identity of scientific research represent a continuum. One extreme is objectivism that assumes that a description of the world in terms of entities, characteristics and relations can exist independently from human experience. A hypothetic-deductive view of science dominates in order to get acquainted with these elements. Comparative studies of large populations will result in law-like generalizations (Duffy & Jonassen, 1992). The validity of this concept depends on two assumptions: the first is the (unspoken) agreement with respect to underlying value judgments, for instance the unrestricted belief in the

beneficial effects of the free market and view of man as a rational actor. The second is a considerable degree of environmental constancy. This latter assumption is an illusion (Baets, 1998).

Consequently, the scientific study of companies has to move from the hypothetic-deductive side of the continuum to the other side, where constructivism prevails. From a constructivist viewpoint, the value of science is the understanding of given situations. Scientific concepts, as stored in books, have no immanent value. These concepts may be useful as tools to understand specific situations: "Conceptual tools. . . .reflect the cumulative wisdom of the culture in which they are used and the insights and experiences of individuals. Their meaning is not invariant but a product of negotiation within the community" (Bednar, Cunningham, Duffy & Perry, 1992; Brown, Collins & Duguid, 1989). This is not the place to deal with the many faces of constructivism and its variety in scientific methods. However, these methods have in common the deepening of understanding of specific phenomena instead of statements regarding groups of phenomena. Participatory techniques in depth analysis and learning histories of stakeholders within companies invariably are valued rather than surveys and experimental designs.

Moore (Laszlo, 2001) has introduced the idea of business ecosystems, "a frequently used metaphor for the new type of cooperative and competitive relationships that take place in today's business world". The essence is that as a part of the development of what we named dynamic knowledge, the management of a company has to learn how to act in accordance with the sociocultural, economic and biophysical conditions of the regions in which a company operates. This knowledge is to a large degree unique for the company. As this knowledge is more profound, the comparative advantage for the firm will be larger. In order to make a difference with knowledge, which is focused on the return on investments in the short term, we also speak about an evolutionary orientation to knowledge.

12.2.3 Business Practice

In his book "the structuring of organizations" Mintzberg makes a distinction between environmental complexity (simple versus complex) and the degree of environmental dynamics (stable versus quick changes) (Mintzberg, 1979). Combination of both axes depicts four different types of environments. Each cell in the matrix corresponds with a specific organizational structure. The cell that unites complexity and (relative) stability is the home of large international divisional companies, which until today dominate the business scene and are the home of most MBA alumni. These companies usually have a staff-line organization and accompanying hierarchical forms of decision-making and strategy development. Long and medium-term strategic plans guide the actions of these companies.

These companies rely on control of human behavior through the formalization of activities. Decision-making takes place according to established procedure and faculty clusters in functional groups like the business schools. Decisions have to be are 'rational', meaning that science is considered as its principal force. For the same reason that the scientific model lost its adequacy, the bureaucratic organization is outdated. The world reveals dynamic development. Consequently, companies increasingly meet with ill-defined or wicked problems, which they must counter immediately. Bureaucratic organizations fail because of their complex structures, lack of understanding between divisions, risk-avoiding behavior in order to satisfy shareholders, powerful representative bodies, large staff and growing dependence on external consultants, and last but not least a new class of mercenary tycoons. In addition, by their behavior these firms support the development of the economy at large in a direction that is unsustainable from a systemic, a financial and a behavioral point of view (De Woot, 2005).

The organizational model that is adapted to a dynamic environment is the 'adhocracy' or network organization, where decision taking is decentralized. These organizations depend on knowledge workers who take initiative, teamwork and decision-making based on involvement, empathy and intuition. Leadership is not at the top but in the center of the organization. Network organizations are able to accommodate changes without the necessity of reorganization, which is the traditional method bureaucracies cope with change.

In situations where environmental turbulence and ambiguity prevails, the decision maker has to rely on dynamic knowledge, which embraces all past experiences. An expert manager will keep an open mind concerning inputs from science. However, he or she reconstructs these inputs within the frame of his dynamic knowledge. Weick refers to active sense making, which combines detailed knowledge of what's going on in the company and its environment, with the ability to interpret and combine freely different perspectives, theories and concepts (Weick, 1995).

Dealing with fuzzy problems requires confrontation and integration of different viewpoints delivered by collaborative persons. A collaborative approach based on cognitive conflict is most suitable. Psychological safety is commonly mentioned as a basic and essential requirement before any claimed potential of teamwork may be realized.

MBA students are more confident with rational forms of decision-making based on quantitative techniques and the application of scientific theories. As they lack dynamic knowledge, and scarcely are challenged to be empathic, the process of active sense making is beyond their powers.

12.2.4 The Institutional Context

The geopolitical relations in the world will change dramatically within 10 years. Developments outside the Western world, especially in China, the rest of Asia

and South America and to a lesser degree Russia and the middle East accelerate the degree of dynamic change and the necessity to behave accordingly. Observers think that the dominance of the English-speaking world will decrease and Spanish and Chinese speaking countries will start to play decisive roles. In all continents, an increasing number of countries are developing faster than the United States and Europe. After our industry has almost vanished completely, the Holy Grail is the 'knowledge economy'. This refers to the assumption that economic growth in society depends in the first place on the possession and application of the right knowledge. The underlying belief is that the western world is still the forerunner of technological development and the main source of knowledge. However, many countries in the world are already ahead in fields like computer technology, nuclear energy and agriculture, service and tourism as well.

According to Castells, the absence of dominating world powers and the subsequent decreasing power of the nation state will turn the future world into a network society: a complicated fabric of relationships partly based on comparative advances. The future position in this network of countries, regions, companies and people who belong to the old world, the United States included, will depend on two conditions:

- Intercultural competence: the need to co-operate with other countries on equal footing and with respect.
- Delivery of added value: the need to become a partner that is wanted and – possibly – desired. If we cannot be distinctive, the 'new world' will develop anyway without the interference of the 'old one'.

The necessity of the delivery of value added raises the topic of the relation between education, research and development. Apart from very large companies with research programs of their own, research usually takes place in independent institutions and universities, which give rise to a problem indicated as the 'innovation paradox'. Especially in Europe, governments invest large sums of money in research at universities. However, the contribution of this research to social, economic and technical innovation is modest. For this phenomenon several supplementary reasons are given. In the first place universities prefer fundamental research within the context of academic disciplines, which only exceptionally leads to applicable results in the short term. Gibbons investigated innovation processes and concluded that making any difference between fundamental and applied research is meaningless in domains were fast changes take place. In such domains research has to be trans-disciplinary and organized in close co-operation between universities and companies in order to be productive (Gibbons, 1994).

Twenty-five years ago, Hayes and Abernathy already uttered the complaint that management education neglects technology and operations management. Consequently, the management of companies lacks the ability to recognize innovative technological developments (Hayes & Abernathy, 1980). Interesting also is research into the relation between the educational background of

CEOs and the quantity of investments in research and development. CEOs with a technological background invested more in research and development than CEOs with a MBA background did. The CEOs with a background in law demonstrated the smallest willingness to invest in innovation (Barker & Mueller, 2002; Lee & Smith, 1992).

Exactly here a divergence seems to appear between the old and the new world. Professor Monika Kundera – already mentioned – insists that innovation and development in each country requires detailed knowledge of the local social and economical relations. Only then can superficial developing plans of foreign investors come to a halt. She wants to bring the needs of the emerging Polish economy right into the center of the business schools and other institutions of higher education.

12.3 Strategy Revisited

The second part of this article reveals some consequences with respect to strategy-decisions of business schools ensuing from the previous analysis.

In my opinion, we face a six-fold challenge. Deans of business schools will have to make up their mind how to meet these challenges. They may opt for radical changes or for a step-by-step approach. This is a matter of tactics. Below, for each strategic choice, several levels of implementation are distinguished. These levels vary from limited to comprehensive implementation of the strategic choice in question.

12.3.1 Dedicated Degree Programs for Different Target Groups

Business schools used to offer a variety of master programs that utilize the same building blocks with only marginal adaptation. This choice does not do any justice to the differences in educational needs within the diverse population of master students enrolling in business schools. These differences include the length of the experience as a manager, an academic versus vocational orientation and prior education at bachelor level (business administration, technical, social science or something else). In addition, programs can be full-time of part-time, campus-based, distance learning or blended.

The strategic choice to be made is in favor of the highest level of adaptation to the diversity of educational needs (Lorange, 2005; Mintzberg, 2004; Shenton, 2002). The first distinction is between academic and professional programs. Academic programs offer many opportunities for reflection upon business practice from an academic viewpoint. In addition, these programs make students acquainted with research in a passive and in an active way. Two types of academic programs are feasible. The first type is generalist. Students study the complicated fabric of organizations and the business ecosystems that tie these

Level	Explanation
Standardized higher education programs	The use of same course content and didactical approach in all higher education degree programs
Dedicated and independent programming for academic and professional degree programs	Academic degree programs (BSc, BA, MSc, MA) are developed independently from professional degree programs (MBA). Consequently these programs have specific goals, content and didactic approaches
Dedicated and independent programming for academic professional and executive and non-executive degree programs	All higher education degree programs, which differ with respect to purpose and target group are developed and organized independently in order to maximize the potential gain for different target groups

Fig. 12.2 Implementation of dedicated degree programs

organizations together. Generalist programs are best for students with none or limited experience. Programs that introduce students into the business functions are outdated. The second type is specialist. These programs allow in depth study of one or another aspect, business functions not excluded. These programs are best suited for practitioners with substantial experience in the field.

A second distinction is between executive and non-executive master programs. A first decision is to exclude students without relevant experience in management from professional master programs and to confine to part-time programs in order to maintain a vivid interaction between the domains of theory and practice. This proposal will deprive business schools from its 'cash cows', the full-time MBA programs. However, these schools can offer Master of Science programs to students with modest experience who prefer continued study to the growth of their experience. The difference will not be that large, because many fulltime MBA-programs are (more than often weak) infusions from Master of Science programs. As the threshold for accreditation is higher for Master of Science programs, a side effect to be welcomed is that the more distinguished schools will survive.

Along the route towards maximal dedication, three implementation levels can be distinguished (Fig. 12.2).

12.3.2 Integrated Knowledge of the Economic, Social and Biophysical Context of Business Processes

People have always considered knowledge as relevant for good performance of business, apart from the recognition that management is a craft and an art as

well. During the first half of the 20th century, companies focused on knowledge of internal processes (Frederick W. Taylor: scientific management). Due to an increase in competition, knowledge of markets and competitors moved to the center (Michael Porter: competitive advantage).

Neither knowledge of internal processes nor knowledge of markets suffice any longer to face dynamic changes. Organizations in the 21st century need in depth understanding of the socio-cultural and bio-physical dynamics of their environment and have to draw insight from the sciences of complexity. These new sciences support the idea of an interconnected, collaborative, participatory, and creative universe. It is here that the already mentioned metaphor of the business ecosystems enters (Laszlo, 2001).

Business school students will have to acquire the ability to develop opportunities for existing and new companies based on business ecosystems approach. Attaining this goal depends on a thorough knowledge of economic, socio-cultural and biophysical dimensions of a specific company and their relations within the regional context in which companies are operating. Additionally, students will realize that sustainable projects need sufficient local support from the authorities and the population. The challenge for the evolution of the business world is clearly articulated by Nattrass and Altomare who explain, "it is no longer sufficient to be a smart organization, one that can scan the commercial environment, detect variations, and react accordingly. If we restrict ourselves to reacting to signals when it comes to human impact ... we may well end up focusing our organizational resources just on minimizing the pain of irreversible damage. Our business organizations need to become conscious of the evolutionary role business plays in the future of the planet and to take responsibility for that role" (Nattrass & Altomare, 1999).

Along the route towards a systematic study of business ecosystems, three levels can be distinguished (Fig. 12.3).

Level	Explanation
Knowledge of internal processes	Emphasis on knowledge of the business functions. Focus on internal processes as logistics, mass-production and management
Knowledge of the relation between the organization and its customers and suppliers	Emphasis on knowledge of market opportunities, supply chains and on growth of production and services
Knowledge of the complex interactions within the business ecosystem	Emphasis on Integrated knowledge of economic, social and biophysical context of business processes. Focus on sustainability and social innovation

Fig. 12.3 Integrated knowledge of economic, social and biophysical context of business processes

12.3.3 Anchoring of Education in the Business Context Where Students Will Be Employed

Executive programs must include reflection of current business practices. Students will have to bring in examples of their own decisions and data upon which they justified these decisions. Programs for less experienced students must bring students into companies and visa versa. That means among others things that business students carry out projects in companies or organizations. In addition, students have to learn to formulate solutions for problems, knowing that any problem has different conceptualizations. They learn how to find evidence for each of these solutions and to select 'the best' in a collaborative process with fellow students and the owners of the problem.

Schools have a variety of didactic models at their disposal. These models differ in the priority of teaching of disciplinary knowledge to the analysis of realistic problems by students. The analysis of realistic problems facilitates deep understanding. However, most students will benefit from a frequent alternation between theoretical and practical viewpoints. A curriculum that consists of projects and supporting disciplinary courses, like for instance the Aalborg model will offer the best results, especially for inexperienced students (Borgnakke, 1999; Kjearsdam & Enemark, 1994; Van den Bosch & Kieft, 2001). Executives learn best in programs that enable in depth discussion of life experiences of the participants.

Five implementation levels are distinguished in the interaction and mutual enforcement of theory and practice within the future business context of students (Fig. 12.4).

Levels	Explanation
Theory-based or discipline-based	Students study conceptual, theoretical and methodical knowledge, through which they become familiar with the disciplines. No additional arrangements for application are offered
Case-based	Students study styled and generalized specimens of situations in practice. They learn generalized methods to solve the built-in problems
Task-based or problem-based	Learning sequences use styled problems as a starting point. Students define a problem and subsequently collect relevant (scientific) information to analyze and conceptualize the problem
Inquiry-based	Students carry out research (theoretical and empirical) to increase their knowledge about a problem that is usually defined within the context of the educational institution and for purposes of scientific development
Practice-based or project based	Students participate in (research) projects, which aim to clarify realistic business problems. They usually work together with the owners of the problem

Fig. 12.4 The organization of the relation between theory and practice

12.3.4 Focus at the Development of Creative, Empathic and Analytical Abilities Within Managers

The case-method, a dominant teaching-model in many business schools, focuses on analytic skills. Mostly, the authors of cases hide the clue that students have to discover in the dataset. Therefore, business school students are accustomed to look at (financial) data in the first place before taking decisions. Consequently, these students are competent in rational decision-making. Unfortunately, rational decision-making fails in case of fast changing and complex environments, characterized by wicked problems. As mentioned before, under these circumstances active sense making, preferable in teams comes up.

Analytical skills are a necessary but definitely insufficient part of what managers have to learn. Mintzberg offers a valuable set of conceptual tools to think about managerial competences. He distinguishes five mindsets, which managers should have at their disposal. 'Analysis' is one of these and enables managers to deal with organization. A second one is 'Action', which enables the implementation of change. The third one is 'Collaboration', which enables to manage relations. The fourth one is 'Worldliness' which facilitates the understanding of context and the last is 'Reflection', which enables managers to deal with themselves.

Broadening MBA-programs to include the above-mentioned mindsets requires more than cognitive components alone, which in their turn are more embracing than the analysis of financial data. Soft skills, including the ability to communicate effectively with customers, labor unions, public agencies and representatives, NGO's and pressure groups are indispensable. The development of soft skills runs parallel with reflection on ethical and societal effects of business operations. In addition, managers need to explore unconventional ways of thinking and becoming conscious of their own biases and prejudices.

In the inclusion of other than cognitive components in the program three levels are distinguished (Fig. 12.5).

Level	Explanation
Focus on intellectual development	By their consequences, learning activities result primarily in the development of students' intellectual faculties
Focus on intellectual and social development	In the curriculum, a substantial amount of students' time and credits are devoted to the development of social responsibility and ethical judgments
Focus on intellectual, social and creative development	In the curriculum, the development of intellectual abilities, social responsibility and creativity are well balanced and interrelated

Fig. 12.5 Implementation of social and creative components in programs of business schools

12.3.5 Development of Intercultural Communicative Competence

The future global position of Western companies will depend on the innovativeness of its contribution and especially on intercultural competence. Differences in financial and economic power will decrease and consequently no longer compensate for boorish and disrespectful behavior.

The ability to co-operate in an equal and respectful way with people from several countries and with different cultural backgrounds is not obvious for Western students. Even in schools with a large percentage of students from abroad, students often cluster in homogeneous groups, according to their own background.

Language and especially cultural barriers contribute to this distance. Until now, business schools tended to offer their programs in English. In order to demonstrate their willingness to co-operate worldwide in an equal fashion, European and American schools should stimulate the development of fluency in either Spanish, Russian of Chinese by all students.

Truly international schools have students and staff from several continents and they use various languages. Research and education focus at the development of global relations based on understanding, more equality and sustainable development. This does not mean that all schools that participate in a network of international schools have to adopt the same identity (Cabreta & Bowen, 2005; Howe & Martin, 1998). 'Truly' international schools in for instance China must reflect the culture of the region without restricting the freedom of speech, behavior and communication of its students as mutual understanding and respect are dominant values.

Five levels are distinguished in the development of intercultural competence (Fig. 12.6).

12.3.6 Contribution to Community Development by Lifelong Learning

The occurrence of sustainable economic growth and social innovation require a tight co-operation between national governments, companies and universities. I will briefly introduce the example of Escuela de Graduados en Administración y dirección de Empresas (EGADE), the business school of the Instituto Technológico de Estudios Superiores de Monterrey in Mexico, in brief Monterrey TEC.

The school wants to be a center of excellence in science and at the same time, it desires to contribute to the development of Mexico and other South-American countries as well. This has a threefold consequence. At first, the school offers degree programs and many non-degree programs for all kinds of people. Secondly, it uses an integrated mixture of face-to-face teaching and distance teaching and consequently, is able to support large

Levels	Explanation
Domestic schools	Development of programs for foreign students, usually in English. Economic motives prevail
Domestic schools with bilateral agreements	Settling of agreements with other universities for student exchange. Creation of experiences abroad is the main motive. Students have to learn the language of the institution they plan to visit. They follow courses developed for home students
Multinational schools	Development of curricula in English language for an international audience. The program offers opportunities for collaboration; the content results from the national requirements of the school
International multi-domestic schools	Networks of schools that co-ordinate their programs or that collaborate in program development in order to facilitate mutual exchange of students during a significant part of the program (at least a semester). The target is to award students with joint degrees, often based upon a common educational philosophy
Transnational schools	A network of multi-domestic schools. Investments are in the development of joint resources. Each school offers an internationally oriented program without loosing its own identity and has an international faculty. Many opportunities for exchange are offered

Fig. 12.6 The development of the international character of business schools

groups. In the third place, the School has an integrated approach in which economic motives, social welfare and environmental sustainability come together.

The development of a knowledge society demands a re-appreciation of non-degree programs by a large participation of people who otherwise would never enter university classes. Universities will have to take their responsibility for life-long learning and offer as many programs as they can. Distance and blended learning will increase the accessibility of community development and continuous learning programs. Adult learners have different learning preferences due to prior learning and diverging learning styles. The effect of non-degree programs depends entirely on the degree in which the learning needs of the participants are satisfied. The replication of lessons that are meant for full-time students is useless. A first step is adaptation of the language and presentation style to the customers, without altering the content. The choice of content in correspondence with the needs of the participants will improve the results. Personalization of the learning program, for instance to allow students to use their own learning style, will result in significant improvement of the effectiveness of the program.

Four levels are distinguished in the adaptation of the content and presentation of programs for community development (Fig. 12.7).

Levels	Explanation
Commoditization	Courses are developed and distributed as standardized products, in order to maximize economies of scale
Localization	Standardized courses are adapted to local markets, by adapting language and examples in order to increase its use within specific contexts
Customization	Demands of specific user groups are taken into account during the development of courses in order to maximize the needs of these groups
Personalization	The learning materials are organized in order to deliver individualized packages. The goal is to maximize the effectiveness of every individual student's learning

Fig. 12.7 Levels of adaptation of programs to the needs of non-academic groups

12.4 Where Are Schools on Their Way Towards Innovation?

The third part of this article gives an account of an investigation into the perceived relevance of the strategic decisions mentioned above and the choices business schools make with respect to the levels that are distinguished.

We were interested in the answer at two questions:

1. The dominant level of implementation in a selection of innovative business schools
2. The direction of foreseeable changes in the level of implementation in the near future

12.4.1 Method

In order to answer these questions, we selected a group of 40 business schools from the list of participants of the 2006 conference of the Edineb network. Edineb is an organization, of which the members are higher education institutions with a distinct policy towards educational innovation. We managed to have responses from representatives of 25 schools (*see* Appendix 1 for a listing of the participating institutions).

All representatives of the schools mentioned filled out a questionnaire. We asked them to indicate the level of implementation for each of the six strategic choices in their respective schools. In order to decide, respondents had to rate the importance of each level of implementation for their own school at a 1–10 scale. Respondents were instructed to divide 10 points for each strategic decision. For instance, if their school offers standardized courses for all programs, 10 points are allocated to the corresponding level of implementation and zero points to the other levels.

Secondly, we inquired after the existence of planned changes in the educational strategy within 2 years. In case of foreseeable changes, we invited participants to fill out the questionnaire again, taking into account the situation after the planned changes.

During a preceding pilot investigation, we simply asked respondents to mark the dominant level of implementation. Afterwards the participants complained because this procedure obscured the possibility to indicate changes in the relative importance of the distinguished levels without necessary changes in the dominance of one level as such. Consequently, we moved to a more complicated way of questioning.

12.4.2 Results

Figure 12.8 gives an overview of the scores. Column 1 lists for each strategic choice the levels of implementation (in accordance with section 12.2). Column 2 shows the average score of each implementation tactic for all educational institutions. Column 3 reveals the same for the expected situation when in a couple of years current changes are implemented. Column 4 shows the standard deviations of the results of the individual schools. Finally, Column 5 is the Spearman correlation between the actual and the future situation.

Appendix 2 is a more extended version of Fig. 12.8 and explains how we described each implementation level to the respondents.

◦	Avarage		Standard Deviation		Pearson
Level	Actual state	Desired state	Actual state	Desired state	
1. Dedicated degree programs for different target groups	10,0	10,0			
1. Standardized higher education programs	3,7	2,5	2,5	1,7	
2. Independent programming for academic and professional degree programs	3,7	3,3	1,8	1,6	
3. Independent programming for academic, professional, executive and non-executive degree programs	2,6	4,2	1,7	1,8	
Average level of implementation	1,9	2,2	1,1	1,0	–0,84005
2. Integrated knowledge of the economic, social and biophysical context of business processes	10,0	10,0			
1. Internal orientation	4,0	2,3	1,5	1,1	
2. External orientation	3,6	3,4	0,9	1,0	
3. Evolutionary orientation	2,5	4,3	1,6	1,5	
Average level of implementation	1,9	2,2	0,8	0,8	–0,95008

Fig. 12.8 Ratings for implementation levels of strategic choices

3. Anchoring of education in the future societal context where students will be employed	10,0	10,0			
1. Theory-based or discipline-based	3,0	1,8	2,0	1,4	
2. Case-based	2,2	1,8	1,1	0,8	
3. Inquiry-based	1,7	1,8	0,8	1,0	
4. Task-based or problem-based	1,8	2,5	1,2	1,3	
5. Practice-based or project based	1,3	2,0	1,1	1,4	
Average level of implementation	2,6	3,1	1,7	1,8	–0,37689
4. Focus at the development of creative, empathic and analytical faculties of managers	10,0	10,0			
1. Focus on intellectual development	5,8	3,6	2,3	2,4	
2. Focus on intellectual and socia development	2,3	2,6	1,2	1,2	
3. Focus on intellectual, social an creative development	1,9	3,8	1,5	2,3	
Average level of implementation	1,6	2,0	0,9	1,1	0,273571
5.The development of intercultural communicative competence	10,0	10,0			
1. Domestic schools	3,5	2,2	2,4	1,7	
2. Domestic schools with bilateral agreements	2,3	2,0	1,3	0,8	
3. Multinational schools	2,4	2,7	1,7	1,5	
4. International multi-domestic schools	1,3	2,0	0,9	1,3	
5. Transnational schools	0,6	1,0	0,7	1,0	
Average level of implementation	2,3	2,8	1,7	1,8	0,730839
6. The contribution to community development by lifelong learning	10,0	10,0			
1. Commoditization	4,8	2,5	2,7	2,5	
2. Localization	2,1	2,4	1,6	1,2	
3. Customization	1,9	2,6	1,5	1,2	
4. Personalization	1,1	2,4	1,0	1,9	
Average level of implementation	1,4	2,2	1,1	1,4	0,307095

Fig. 12.8 (Continued)

The data reveal some interesting results. The largest changes seem to take place with regard to strategic choices 1, 2 and 3, taken into consideration the negative correlation indexes. This means that in the actual situation the lowest levels of implementation are mentioned most frequently. The expected changes move into the direction of the higher levels of implementation.

Regarding strategic choices 4 and 5, the situation is confusing. The correlation between the sets of numbers is low; consequently, no major shift can be induced. Strategic choice 6 reveals a positive correlation, which indicates no shift at all.

However, moving to a higher level of aggregation reveals additional evidence. Fig. 12.9 summarizes the average levels of implementation of all schools for each strategic choice now and in the future. The bars indicate the weighted averages of the scores of the levels of all schools. For instance a score of 1, 9 at 'dedicated degree programs' indicates a tendency towards implementation level 2 in the actual state. The value of 2,2 in the desired state means that a majority still chooses implementation level 2, but more respondents tend to level 3.

Figure 12.9 shows a clear tendency towards the higher implementation levels with regard to all strategic choices. This figure also reveals that most business schools still have a long way to go, if they want to reach the highest-level implementation of each strategic choice. In particular, this applies at 'anchoring in societal context', 'intercultural competence' and 'life long learning'. At the

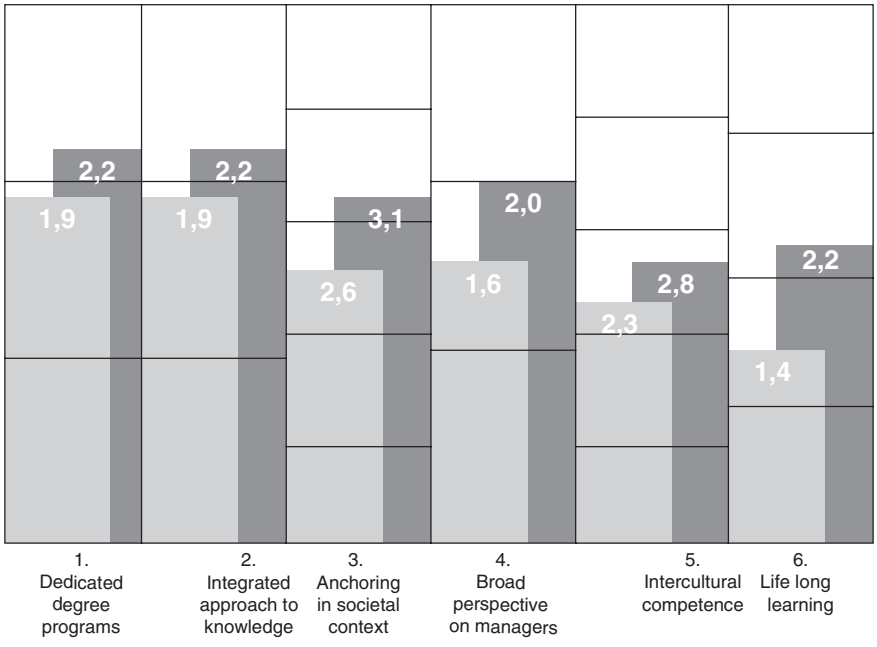

Fig. 12.9 Average implementation levels of 25 institutions of higher education

same time, with regard to these choices, the standard deviations are high. Moreover, standard deviations of future data outnumber those of actual data. Both observations suggest increasing differences between the schools under scrutiny.

12.4.3 Discussion

All respondents recognized the six strategic choices that we defined in the first part of this article. The same applies to the variations in intensity of the implementation of these choices. Representatives of 25 business schools quantified the actual level of implementation in their organization and described the changes due to the realization of ongoing plans. In general, these plans lead to an increase of the level of implementation of all choices. However, with regard to the supposed impact, the strategic choices can be divided into two groups. Without any doubt, dedicated programs, an integrated approach to knowledge and a tighter relation between theory and practice, are along the way. The number of higher implementation levels increases at the cost of the lower levels. With respect to the other strategic choices, a more diffuse situation prevails. Although most schools tend to higher levels, there is still a long way to go until the highest levels come into view. Moreover, the differences between schools increase. The explanation of these processes is subject of further research. Only recently, a more inclusive personality for managers, intercultural competence and community development by means of life long learning are recognized as legitimate strategic choices within the realm of for business education. The choices break away from the narrow conception in which the first aim of the manager is improving the shareholder value of the company. Instead, it should be awareness in stakeholder value growth.

12.5 Conclusion

For two decades, many business schools have improved their educational system, for instance by implementing problem-based learning or projects. These innovations did not veil considerable shortcoming with respect to the mission, objectives and learning outcomes. The choice of an educational system implies decision-making at a tactical level, the real problems regarding the identity of business education and its relation with business science, business practice and the societal environment lay at a strategic level. In this article, a short inventory of these problems initiates a description of six major strategic choices, which business schools have to face. For each of these choices, three to five levels of implementation are distinguished. Our assumption is that

fundamental solutions of the earlier mentioned problems require decisions at the highest levels of implementation.

Subsequently, we wanted to know whether business schools recognize the six strategic decisions and at which level implementation takes place. In addition, we were interested in the dynamics of the development process, in which most business schools are involved. Consequently, we did inquiries about the expected level of implementation within 2 years. After collecting data from 25 business schools, the conclusion is that all these schools take decisions that contribute to the realization of the strategic choices mentioned. In all cases, schools foresee that higher levels of implementation are feasible in the near future due to current innovation plans. This applies most for decisions with regard to the content of the curriculum (dedicated programs, integrated knowledge, integration theory and practice) and less to the societal role of the school (personality of managers, intercultural competence and contribution to lifelong learning).

Appendix 1: Participating Schools

Allen University	Columbia, South Carolina, USA
Alytus College	Alytus, Lithuania
Bergen University College	Bergen, Norway
Canisius College	Buffalo, New York, USA
Cass Business School, City of London	London, United Kingdom
Copenhagen Business School	Frederiksberg, Denmark
Department of Information Technologies, Sofia University	Sofia, Bulgaria
Durham University Business School	City of Durham, United Kingdom
ESCP-EAP	Paris, France
Fach Hochschule Bielefeld	Bielefeld, Germany
FHW/FH-Studiengänge der Wirtschaft	Wien, Austria
INHOLLAND University	Rotterdam, Tthe Netherlands
London Metropolitan University	London, United Kingdom
Maastricht University, Faculty Economics and Business Administration	Maastricht, tThe Netherlands
Open University, School of Management	Heerlen, Tthe Netherlands
Sultan Qaboos University	Muscat, Oman
Superior School of Management of Troyes	Troyes, France
The Hotelschool The Hague	The Hague, Tthe Netherlands
Turku University of Applied Sciences	Turku, Finland
Universitat Oberta de Catalunya	Barcelona, Spain
University of Colorado at Colorado Springs	Colorado Springs, Colorado, USA
Valparaiso University Utah	Valparaiso, Indiana, USA
Via Nova Academy	Epe, Tthe Netherlands
Virginia Commonwealth University	Richmond, Virginia, USA

Appendix 2: Ratings for Implementation Levels of Strategic Choices

Level		Average		Standard Deviation		Pearson
		Actual State	Desired State	Actual State	Desired State	
1. Dedicated degree programs for different target groups		10,0	10,0			
1. Standardized higher education programs	In general, our school uses the same course content and didactical approach in all higher education degree programs.	3,7	2,5	2,5	1,7	
2. Independent programming for academic and professional degree programs	Academic degree programs (Bsc, BA, Msc, MA) are developed independently from professional degree programs (MBA). Consequently these programs have specific goals, content and didactic approaches.	3,7	3,3	1,8	1,6	
3. Independent programming for academic, professional, executive and non-executive degree programs	In our school all higher education degree programs, which differ with respect to purpose and target group are developed and organized independently in order to maximize the potential gain for each target groups.	2,6	4,2	1,7	1,8	
		1,9	2,2	1,1	1,0	−0,84005
2. Integrated knowledge of the economic, social and biophysical context of business processes		10,0	10,0			
1. Internal orientation	In our school, knowledge of the business functions is accentuated. The optimization of internal business processes comes in the first place. Focus on efficiency of production and management.	4,0	2,3	1,5	1,1	

Appendix 2 (Continued)

Level		Average		Standard Deviation		Pearson
		Actual State	Desired State	Actual State	Desired State	
2. External orientation	Knowledge of adjustment of internal and external processes is accentuated. Goal is optimization of market opportunities. Focus on growth of production and services	3,6	3,4	0,9	1,0	
3. Evolutionary orientation	Students acquire Integrated knowledge of the economic, social and biophysical context of business processes. Focus is on sustainability and social innovation.	2,5	4,3	1,6	1,5	
		1,9	2,2	0,8	0,8	−0,95008
3. Anchoring of education in the future societal context where students will be employed		10,0	10,0			
1. Theory-based or discipline-based	Students study conceptual, theoretical and methodical knowledge, through which they become familiar with the disciplines. No additional arrangements for application are offered (except thesis).	3,0	1,8	2,0	1,4	
2. Case-based	Students study styled and generalized specimens of situations in practice. They learn methods to solve the built-in problems	2,2	1,8	1,1	0,8	
3. Inquiry-based	Students carry out research (theoretical and empirical) to increase their knowledge about a problem that is usually defined for the purposes of scientific development.	1,7	1,8	0,8	1,0	

Appendix 2 (Continued)

Level		Average		Standard Deviation		Pearson
		Actual State	Desired State	Actual State	Desired State	
4. Task-based or problem-based	Problems are constructed as the starting point of learning sequences, in which students define the problem and subsequently collect relevant information to analyze and conceptualize it.	1,8	2,5	1,2	1,3	
5. Practice-based or project based	Students participate in (research) projects, which aim to clarify realistic business problems. They usually work together with the owners of the problem.	1,3	2,0	1,1	1,4	
		2,6	3,1	1,7	1,8	−0,37689
4. Focus at the development of creative, empathic and analytical faculties of managers		10,0	10,0			
1. Focus on intellectual development	By their consequences, learning activities in our school result primarily in the development of students intellectual faculties.	5,8	3,6	2,3	2,4	
2. Focus on intellectual and social development	In the curriculum, a substantial amount of students' time and credits is devoted to the development of social responsibility and ethical judgment	2,3	2,6	1,2	1,2	
3. Focus on intellectual, social and creative development	In our curriculum, the development of intellectual abilities, social responsibility and creativity are well balanced and consequently, the results can be demonstrated in our students' competencies.	1,9	3,8	1,5	2,3	

Appendix 2 (Continued)

Level		Average		Standard Deviation		Pearson
		Actual State	Desired State	Actual State	Desired State	
		1,6	2,0	0,9	1,1	0,273571
5.The development of intercultural communicative competence		10,0	10,0			
1. Domestic schools	Our school tries to expand its market by offering programs to foreign students, usually in English.	3,5	2,2	2,4	1,7	
2. Domestic schools with bilateral agreements	Our school settles agreements with other universities for student exchanges. Creation of experiences abroad is the main motive. Students have to learn the language of the institution they plan to visit. They follow courses developed for home students.	2,3	2,0	1,3	0,8	
3. Multinational schools	Our curriculum is targeted for an international audience. The program offers opportunities for collaboration; the content is based on the national requirements of the school.	2,4	2,7	1,7	1,5	
4. International multi-domestic schools	Our school participates in a networks of schools that collaborate in program development in order to facilitate exchange of students during a significant part of the program (at least a semester). The aim is awarding students with joint degrees	1,3	2,0	0,9	1,3	
5. Transnational schools	Multi-domestic schools, which belong to one international organization or a network of	0,6	1,0	0,7	1,0	

Appendix 2 (Continued)

Level		Average		Standard Deviation		Pearson
		Actual State	Desired State	Actual State	Desired State	
	organizations. Investments are primarily in the development of joint resources. All schools offer largely the same program and have an international faculty.					
		2,3	2,8	1,7	1,8	0,730839
6. The contribution to community development by lifelong learning		10,0	10,0			
1. Commoditization	Courses are developed and distributed as standardized products, in order to maximize economies of scale.	4,8	2,5	2,7	2,5	
2. Localization	Standardized courses are adapted to local markets, by adapting language and examples.	2,1	2,4	1,6	1,2	
3. Customization	During the development of courses, demands of user groups are taken into account in order to maximize response the needs of these groups.	1,9	2,6	1,5	1,2	
4. Personalization	The learning materials are organized in order to deliver individualized packages. The goal is to maximize the effectiveness of every individual student's learning.	1,1	2,4	1,0	1,9	
		1,4	2,2	1,1	1,4	0,307095

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