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INNOVATIVE APPROACHES TO BUSINESS EDUCATION

SELECTED ISSUES

VIA UNIVERSITY COLLEGE
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edited by

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Table of content

Preface

Running business in contemporary world has never been as demanding as it is nowadays. Business skills and competences are therefore of a great importance, as they help to acquire and maintain competitive advantage. For business owners and business managers it is increasingly important to gain those skills and competences in a fast and effective way. That is why new and innovative approaches to business education need to be elaborated, disseminated, popularized and – finally – promoted. This book is entirely dedicated to such innovative approaches and its main aim is to propagate them among business educators. The selected issues are described in ten following chapters.

The first chapter discusses an innovative business model designing tool. Its aim is to give a tool that can be used for brainstorming details of the Business Model and can be later used either in Business Model Canvas, Lean Canvas, Lean start-ups or Business plans.

The second chapter is devoted to developing competences for cooperation in international teams. It presents tools and methods that can be used to develop intercultural competences. Intercultural competences are crucial for working in international teams which become a reality in global market.

The third chapter describes benefits arising from managerial simulation games in teaching process. For prospective managers and employees computer simulation is an effective mean of teaching supporting the entire view of a business problem.

Chapter four discusses the use of business imitation games in teaching innovation diffusion. In this chapter, the business imitation game “Innovations and imitations” is presented. This game is a convenient tool for teaching business model development, innovation methods, market analysis, forecasting methods and other.

Chapter five concerns the topic of experiential learning as an important tool in contemporary business education. This chapter presents a review of different forms of experiential learning and emphasizes those which have been successfully tested by the author like case-based and company-based projects as well as export/import projects.

In chapter six one can find the issues connected with innovative approaches to knowledge transfer, experiential learning and SME application within business education. This chapter offers a reflection on pedagogical innovation in business education.

The seventh chapter is deals with project- and service oriented thinking in engineering management education. As the author of this chapter states, professional career should be generally built upon knowledge acquired in the course of university education and the university should support gaining professional experience by making links between the students and business environment.

The eighth chapter presents changes in knowledge organisation and the role of problem-based learning. In the chapter, these issues are discussed by means of sociological theories of education, especially theories and concepts by Bernstein.

The ninth chapter is devoted to the education of managers and precisely, to learning and teaching methods enhancing students' creativity. In this chapter one can find the description of learning/teaching methods and activities enhancing creativity and creative thinking of management students applied on the course “Creative methods in management and managerial games”.

The last, tenth chapter is dedicated to education and professional development for customs auditors. The aim of the chapter is to identify the most significant areas for education and professional development of customs auditors.

With those ten chapters we tried to unveil huge diversity of topics related to innovative approaches in business education. In first chapters we presented some useful tools, then managerial simulation games and business imitation games were shown. We could not omit experiential learning and some SMEs-related application in business education. Problem-based learning techniques and enhancing creativity are yet other important issues. We do hope that university teachers and trainers will find some parts of this book interesting, inspiring and useful. We believe other readers, not involved professionally in business education, may also benefit from this book, as it is devoted to really fascinating and important topics in contemporary business education.

Editors
Małgorzata Zięba & Krzysztof Zięba

CHAPTER 1

Business model designing tool – filling the gap between philosophy and reality

Agnese ALJĒNA*

1. Introduction

Business environment has gone through structural changes during last decades; we live in new globalized and networked economy (Benkler, 2006, Tapscott&Williams, 2008), which means that new era of entrepreneurship is approaching. There are more than half a million of new businesses started every month in US only (Kauffman, 2013). Gender and age balance is reached in entrepreneur statistics – more women, young and senior entrepreneurs enter the marketplace (Zwilling, 2013).

Existing practices for the startup process are becoming outdated; entrepreneurs are looking for more flexible and real-time solutions suitable for different types of personalities in different businesses and industries.

Academics are working on business model theories, analyzing the concepts behind real life businesses. They are describing elements and their interrelations, building up theoretical base. Practitioners and consultants are looking for tools that can be used in startup and business design processes. Often theory seems very far from practical usability and practices vary from very detailed planning to un-planning.

Entrepreneurship and basic business understanding is becoming a necessary skill in modern society; soon we will talk about entrepreneurship as a one of basic skills - like reading, writing and computer literacy.

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2. Development of theoretical framework for Business Model

The notion of Business Model has been used since mid 1970ies and is closely tied with development of Internet and Digital Economy (Ventresca & Ghaziani, 2005, p. 540-541). Usage of the notion has exploded in mid 1990s when cultural change associated with expansion of Internet has moved world to new rules of economy and business (Ventresca & Ghaziani, 2005, p. 531). Usage of "Business Model" term has been growing in exponential speed in academic research as well as business circles (Amitt, Zott& Massa, 2011, p. 5)

Despite frequent usage of Business Model notion, there is no common understanding of Business Model definition among researchers. Scope and boundaries as well as elements used to compose Business Model vary significantly.

Understanding of core definitions as "business" and "model" vary to an extent thus giving wide spectrum of usage of the similar terms. There is no common theory developed as the differences in basics of understanding of Business Model has lead to broad variations of business model thinking patterns.

With development of Network economy situation becomes even more confusing since social and cultural changes are becoming deeper and causes significant paradigm shifts leading to completely new forms how people are living and doing business.

Different authors have used the following Business Model definitions as:

- a statement (Stewart&Zhao, 2000);
- a representation (Morris, Schindehutte & Allen, 2005);
- an architecture (Dubosson-Torbay, Osterwalder&Pigneur, 2002, Timmers, 1998);
- a conceptual tool (Geroge&Bock, 2009, Osterwalder, Pigneur& Tucci, 2005);
- a method (Afuah&Tucci, 2001), a structural template (Amit&Zott, 2001);
- a framework (Afuah, 2004),;
- a pattern (Brousseau&Penard, 2006);
- a snapshot (Demil&Lecoc, 2010);
- a set (Seelos&Mair, 2007) of doing business (Zott, Amit, Massa (2011), p. 4).

One of the most frequently used Business Model definitions is given by Magretta (2002, p.86) "they are, at heart, stories – stories that explain how enterprises work."

Magretta's definition also gives an insight into the change of thought over the time. At the beginning of "business model" era they were perceived as blue-prints, but with time, idea of understanding of business model has developed to more open and philosophical category.

Several most often used and most cited and academically recognized business models are developed by Venkatraman & Henderson (1998), Gary Hamel (2000),

Petrovic et al (2001), Amit and Zott (2002), Yip (2004), Tikkanen et al (2005), Richardson (2008), Demil and Lecocq (2010), Osterwalder and Pigneur (2010).

Venkatraman & Henderson (1998) use three vectors of business organizing – customer interaction, asset configuration and knowledge leverage to describe business architecture. They see business in three stages – task units, organizational level and creating economic value. Business model according to authors should facilitate, guide and provide a context. Authors are warning not to perceive business model as a blueprint.

Hamel (2000) builds business model around four major components – customer interface, core strategy, strategic resources and value network. Hamel bridges these components by configuration of activities, customer benefits and company boundaries. Hamel describes factors determining profit potential – efficiency, uniqueness, fit and profit boosters.

Petrovic *et al.* (2001) uses 7 models for describing logic of business: value model, resource model, production model, customer relations model, revenue model, capital model and market model. Petrovic *et al.* stresses that it is not possible to describe all processes, actors and relationships that describe business.

Amit and Zott (2002) use a matrix of 12 business models elements – structure, content and governance as one dimension and efficiency, complementarities, lock-in, novelty as the other dimension. The center of the business model is value creation.

Yip (2004) describes business model as consisting of these elements: value proposition, nature of inputs, how to transform inputs, nature of outputs, vertical scope, horizontal scope, geographic scope, nature of customers and how to organize. Yip distinguishes business model from strategy as two different concepts. (Yip, 2004, p. 24)

Tikkanen *et al.* (2004) uses different approach and describes business model as interaction of material aspects with belief system of management. Material aspects are grouped around strategy and structure, network, operations and finance & accounting. Belief system is described by reputation, industry recipe, boundaries and product.

Richardson (2008) sees that well-designed business model defines and organizes the activities of the firm to execute the strategy. Richardson uses just three elements for business model – the value proposition, value creation and delivery system and value capture.

Demil and Lecocq (2010) are adding time dimension to business model as always changing element. They use six elements to describe business model: resources and competences, internal and external organization, volume and structure of costs, value proposition, volume and structure of revenues and margin.

Osterwalder and Pigneur (2010) see business model as describing the rationale of how an organization creates, delivers and captures value. They are using business model canvas consisting of 9 elements – customer segments, channels, customer relationships, value proposition, key activities, key resources, key partners, cost structure and revenue streams.

All models are different, uses different approaches and philosophy, therefore cannot be compared directly. Common elements used in all models are value, customers, structure, system. "Strategy" is an element that has been used either as a part of the model (Hamel (2000), Tikkanen et al (2005)), or as a superior element determining business model (Venkatraman & Henderson (1998), Yip (2004), Osterwalder & Pigneur (2010), Richardson (2008)).

Amit and Zott (2002), Yip (2004) look more at the inside of the company, whereas Venkatraman & Henderson (1998) , Hamel (2000), Tikkanen (2005), Osterwalder and Pigneur (2010) go outside the company and looks at business as a part of larger system. Demil and Lecoq (2010), Osterwalder&Pigneur (2010), Yip (2004), Amit and Zott (2002) uses more mechanical and rational approach seeing business as a system as opposed to Tikkanen (2005), Petrovic (2001), Hamel (2000), Venkatraman and Henderson (1998) using more human and philosophical approach when describing business model.

3. From theory to practical application

Business Model concepts described above are rarely used directly by entrepreneurs. For more than 4 decades business plan has been the most popular practical tool for entrepreneurs to describe how they are going to run their business (Berry, 2011).

Despite of the popularity of Business plan as the most common startup and business changeover document form, new wave of critics of Business plan as a tool is approaching - business plans are not flexible, they don't explore new possibilities (Bridge&Hegarty, 2013) and they rarely survive first contact with customer (Blank, 2013).

Academics, consultants and business leaders encourage looking for new forms of business design for start-ups. Business Model Canvas (Osterwald, Pigneur 2010) offers a one-page overview of key business elements. Lean start-up (Ries, 2011) suggests to build business step by step and to find the right business model slowly as the business grows. Lean canvas (Maurya, 2012) is a mix of both above-mentioned concepts, pinning key findings of lean start-up to business model canvas.

If we compare highly philosophical approach in business model descriptions in Chapter 1 and "down-to earth, just do it" approach used by new wave entrepreneurs living in lean start-up mode, there is a need for a tool allowing to consolidate both approaches for maximum effect.

Osterwald's canvas is a good tool for describing the basic idea of the business, and many entrepreneurs and entrepreneurship students use it for creating the basic framework. If compared to cars – business model canvas is like chassis that can be even fully functional, but it is not usable in everyday life. Entrepreneurs need a finished "vehicle" that can be used in planning and running their business.

The main design elements to complement Osterwald's Business Model Canvas:

- incorporation of brand building elements – values, emotions, experience and interface into the model
- reaching the dynamics of business model via geographical and time dimension
- adding more human elements – the owner of business, Mastermind group - his/her support group or brain resource inside or outside the business, also differentiating payer from admirer since more and more modern businesses divide them
- adding society as an element necessary for sustainability and bringing value to the environment where business operates
- moving to 3 dimensional thinking as two dimensional business model is too simplified for real life

Thus author proposes to use system of 14 (or 18 if time and geography is used in expanded mode) business elements:

- Business owner – the most precious resource of the business. Business owner has to love what he does. Business owner is the inspiration for his business and have to be inspired by it.
- Mastermind – a group of like-minded friends. They are the support in the business and life. People who understand business owner's situation and business and help to move forward
- Payer – person who are paying for the "wallet opener" – buyers, customers, clients, students, grant givers, sponsors, patrons
- Admirers – people who love the result of the business, who read, listen to, spread the word. They might not buy yet, but they are advocates of the business and future buyers
- Network – people around the business who are involved in the business processes with or without money
- Society – everyone involved and not involved in the business. People who know and don't know about the business
- Wallet opener – a product, a service, a resource offered and purchased by payer
- Channel – different sales and information channels through which business is reaching its payers, admirers, network and society
- Interface – interaction points where people meet business and business owner – online, offline, phone, media, "advocates", word of mouth communication, resellers etc
- Value – a benefit, economic gain, relationship between benefit and cost
- Emotions – feelings, mood state arising from and because of other elements
- Experience – a sum of all emotions, memories arising from relationship or action

- Geography – Local, National and Global markets – distinguished by language, culture, traditions, also law and business environment.
- Time – Today, Tomorrow and In future – as fixed status of existing situation, in short and long term.

Most of the business models described in chapter 1 use two-dimensional approach. Author considers it as too simplified approach and suggests using three dimensions putting business elements in cube like model with Human elements as one dimension, Material elements - wallet opener, interface and channel as second dimension and non-material elements – value, emotions and experience as third dimension (Figure 1). The dynamics of business model is achieved via different size (geography) and shift in the time as fourth dimension (Figures 2&3).

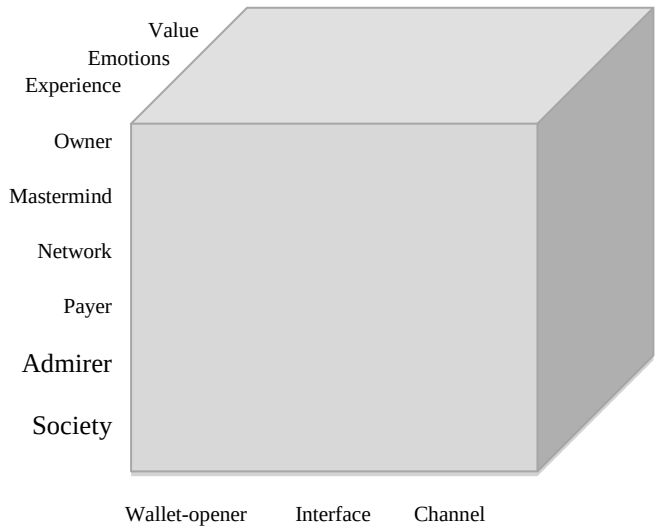

Fig. 1. Three-dimensional Business model

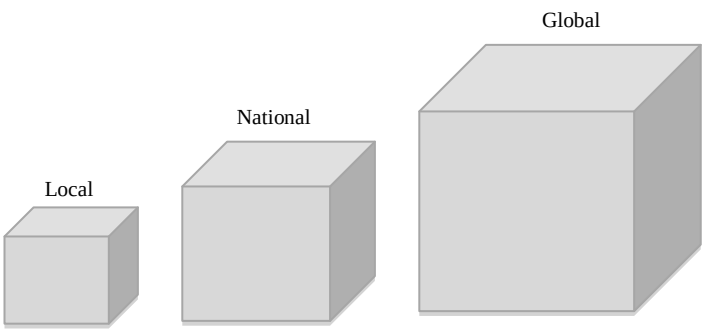

Fig. 2. Dynamics of business model – size by geography

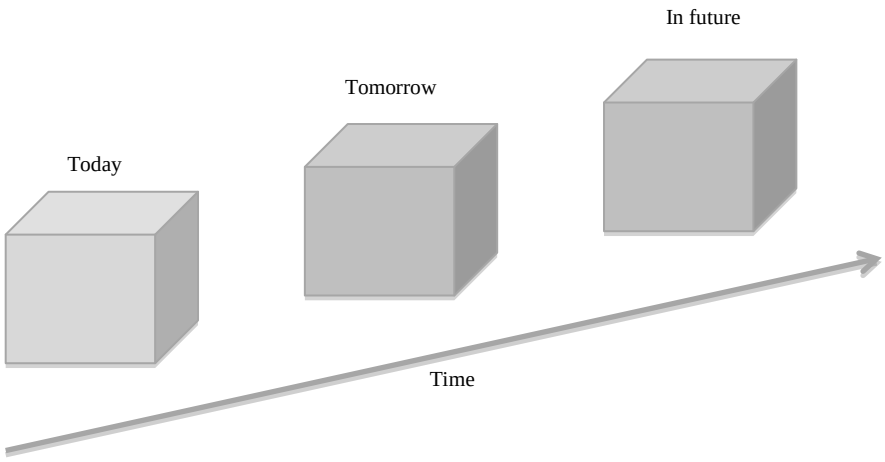

Fig. 3. Dynamics of business model – change over time

3D approach gives possibility to view interrelations among the elements in several levels. First one is within each element group or within one of the dimensions of the cube. For example, how you as a business owner are connected to your Network or Admirers, or how Admirers are connected to Society and Payers. Similar connections exist among material and non-material elements.

The second level is tying together all dimensions – finding interrelation point for all involved elements. For example, analyzing cross point of Admirers, Channel and Emotions requires a very specific definition of what Emotions Admirers experience over one or another sales or communication Channels.

The third level is looking at the dynamics of the business model and each of the interrelations point over geography and/or time.

Therefore, 18 elements give almost endless variations how to look at the business and encourage finding answers/definitions to specific real life situations.

4. Practical application for entrepreneurs of the three dimensional business model

Three dimensions plus different size and change over time is a complex task for human brain. Even the most visually talented people need some sketching or additional tool for simplifying the task. Also the overview of the business elements and their interrelations is necessary.

4.1 Graphic approach

One of the simplifications can be made by bringing all elements back into two dimensions – like drawing the map of three-dimensional world (Figure 4.).

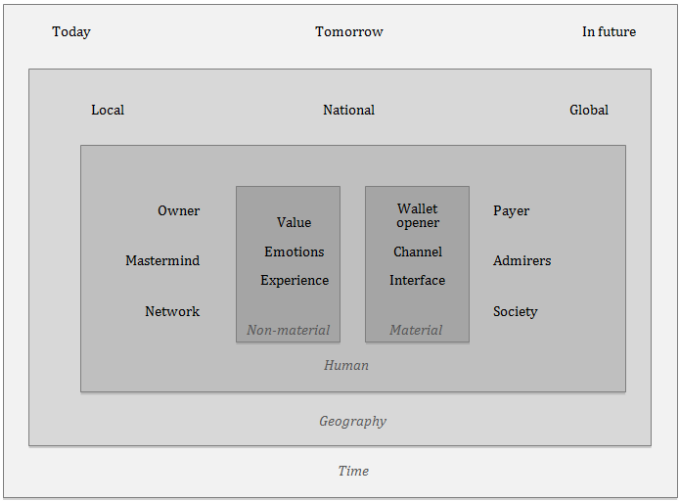

Fig.4. Simplified business model

The simplified business model can be used as a guide for defining all key business elements. Entrepreneurs can start defining from the centre, from non-material and material elements. The next step would be defining human elements and finding relationships and interaction between non-material, material and human elements. The next step would be to look at business model dynamics in geography and after that – for time element for each geographical dimension.

4.2 Dices' approach

For practical exploration of three-dimensional relationships, author has created a tool consisting of three dices and 18 description cards (Picture 1). Each dice represents one dimension – human, material and non-material aspects of the business. Geography is added to material dice and time to non-material

Fig. 5. Business designing tool

Practical usability of the tool for business design:

- during the business planning,
- as a business fitness tool,
- as a teaching instrument.

During the business planning stage dices can be used for designing the business concept and details that can be later added either to Business Plan or Business Model Canvas.

Entrepreneurs can use the approach both for new businesses, start-ups as well as for new product development or for business expansion. Like in graphic approach, it is suggested to start by defining non-material elements – value, emotions and experience that serve as a base for defining business vision, mission and values and are key elements for brand building. The next advised step is to define main material elements – the product, channels and interface, followed by human elements. After defining the scope of above mentioned basic elements, entrepreneurs should fine-tune the business model by looking at interrelations each element with other elements – first within their group (non-material, material, human) and then combining all three dimensions. The number of different three dimension combinations is 54, which means that process is long and requires deep analysis of potential business. As the last two steps adding geographical and time dimensions are advised.

For established and running businesses dices can be used as a "business fitness" tool. Usually entrepreneurs think a lot during the start-up phase and during the early development, but established businesses require continuous design and thinking. If business doesn't require major changes that can be achieved through deeper analysis described in business planning process, entrepreneurs can use dices for continuous business development. It can be achieved by throwing dices thus receiving combination of 3 dimensions. For example, dices can give a combination of "Network + Local + Value". Entrepreneur might ask and look for the answers to questions like "What value do I/my business provide to my local network?"; "What values are important to my local network?", How can I add more value to my local network?", "how local network could add more value to my business?" etc. Entrepreneurs can use random elements or if there is some issue requiring additional attention in one of business elements, it is possible to keep that element as static and play with other elements.

Dices can be used as a teaching instrument in classrooms, by business coaches and in trainings. It can be used in private sessions, by entrepreneurs themselves or in groups. Suggested group size is 4-5 participants. It is possible to work on individual projects as well as for group projects. If the group has many projects, it is advisable to give a short introduction of each business and participant before the brainstorming session starts. Then each participant throws dices and the entire group brainstorms around the given combination. Then the next participant throws dices and brainstorm-

ing starts on the next project and given combination. It is advisable to agree on timing and keep stopwatch. Advisable time per turn is 5-7 minutes. For students and for groups not knowing basic business concepts, it is advisable to have a moderator, but for experienced entrepreneurs groups can be self-learning.

5. Conclusions

Business world has experienced structural change over the last decades, which has lead to new understanding of business model concept. Academics and practitioners are looking for new ways to describe it and make the concepts usable by entrepreneurs and entrepreneurship students.

For entrepreneurs Business Plan has been the main business planning tool for 4 decades and more and more critics are addressing it as being ineffective and inflexible for current life and business environment. While Business Plan's position as the only accepted way of describing new business is still quite secure, business world is looking for new ways and practices for designing start-ups and changeovers.

Business model canvas, lean start-up and lean canvas are the latest trends but together with academic theories about business models and their design, there is still a gap between theory and everyday use that should be filled with new tools to support different entrepreneurs.

One of the proposed tools is a system of 3 dices and 18 business elements that help to think around and design either new business or keep existing business in good shape.

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Summary

Professionals and academics argue about the best form of business modelling for new and established businesses. Business plans have been the most common and widely accepted way of documenting new or changing existing business. New wave of

critics of Business plan as a tool is approaching since business plans are not flexible, they don't explore new possibilities (Bridge&Hegarty, 2013) and they rarely survive first contact with customer (Blank, 2013).

Academics, consultants and business leaders encourage to look for new forms of business design for start-ups: Business Model Canvas (Osterwald, Pigneur 2010), lean start-up (Ries, 2011) and lean canvas (Maurya, 2012) being the most popular practical tools for entrepreneurs. All of these concepts are built around designing a Business Model.

The notion of Business Model is widely used both in academic and business circles. There is no commonly agreed definition of Business Model, its scope and boundaries, as well as elements used to compose Business Model as it vary significantly among different authors.

Besides different views on Business Models, there is a gap between academic and philosophical understanding of Business Model and its practical application. Entrepreneurs and business students lack a simple brainstorming tool for thinking around Business Model elements and their interrelations. As a result, Business Plans, Business Model Canvas and Lean start-ups cope with oversimplified and/or not thoroughly analyzed possibilities.

The aim of the chapter is to give a tool that can be used for brainstorming details of the Business Model and can be later used either in Business Model Canvas, Lean Canvas, Lean start-ups or Business plans. There is also a need for a tool that is easy to use and can serve as a "business fitness" exercise for established businesses.

CHAPTER 2

Developing competences for cooperation in international teams – tools and methods

Beata KRAWCZYK-BRYŁKA*, Katarzyna STANKIEWICZ*

1. Introduction. The importance of cultural diversity in management

Diversity is a term that refers to the differences among people related to gender, age, national and ethnic origin, race, religion, sexual orientation or disability (Morawska-Wilkowska, Krajnik, Remisko, Wolsa, and Kaczmarek, 2009). H. Jahuari and S. Singh (2013) define diversity as a mixture of individuals who have differing group identities but operate under a common social system. If such operation takes place in the workplace and in teams carrying out professional tasks, the attitudes of their members towards cultural diversity become particularly important, as they impact the effective implementation of the established objectives. Hence, an important theme in the management literature is the management of cultural diversity — introducing staff to work in international teams, in multicultural organizations and in the global market. The cross-cultural, as well as and communication and information competences of both employers and employees are now considered a key source of capital of individuals and enterprises functioning in the knowledge economy (Sobieraj, 2012a). They are also treated as necessary for the effective functioning in the global market (Sobieraj, 2012b).

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This study relates to the issues of preparation for cooperation in cross-cultural teams even before taking up economic activity. The purpose of this chapter is to present the methods used during the classes with students of the Faculty of Management and Economics, aimed at shaping their cultural sensitivity and consistent with the world-renowned Learning by Doing method. This method assumes that the best way to develop competences is primarily taking action allowing for gaining personal experience. The learners have the opportunity to actively participate in the project, during which they truly execute the given task (Schank, Berman and Macpherson, 1999), instead of receiving the "know-how" passively. This is a method especially dedicated to developing selected skills, however, it is also emphasized that it consolidates knowledge and reinforces the positive attitude of students towards the transmitted content (Felder and Brent, 2003).

2. Shaping cultural sensitivity

The individual cross-cultural competence means the ability to make flexible changes in one's knowledge, attitudes and behaviour as a consequence of openness to cultural differences and the ability to cooperate with others, despite the identification of these differences (Pillay and James, 2013). Cultural sensitivity is a trait that allows for looking at cultural differences from the perspective of one's partner, not one's own, due to the awareness of cultural differences, respect for them and empathy (Nunez, Nunez-Mahdi and Pompa, 2007). Is is sometimes reduced to the emotional dimension and defined as a positive attitude accompanying the understanding and appreciation of cultural differences, and therefore treated as one of the elements of an attitude towards cultural diversity which can be perceived as "cultural intelligence". The cultural intelligence is the ability to adapt to the realities other than one's own culture. It includes the ability to interpret the behaviour of representatives of other cultures due to high motivation and cognitive abilities, resulting in the ability to adapt to the requirements of these cultures and interact effectively (Kolanko and Olszewski, 2011). Regardless of the differences described, all of the above personal competencies for working in conditions of cultural diversity assume the awareness of cultural differences, their acceptance and the ability to integrate them with the dimensions of one's own culture.

In the case of managing cultural diversity in an organization or a team, the responsibility for the development of cross-cultural competences of employees is assigned to the management of companies or group leaders, who should create a climate conducive to diversity and cultural synergy (Seymen, 2006; Jauhari and Singh, 2013). M. Higgs (1996) characterizes a culturally-synergistic organization as an environment in which a combination of different perceptions of the situation is promoted as the best state, while perceiving the risks arising from multiculturalism and therefore devoting time and attention to trainings developing cultural competence of the staff, to develop a strategy for the use of benefits which may be brought by cultural differences.

It has been suggested that developing personal cross-cultural competences and teaching the process of cultural diversity management should take place already at the stage of vocational education (Pillay and James, 2013).

3. Using the Learning-by-Doing method in the development of cross-cultural competences of business students

The achievement of the strategic purpose of the Faculty of Management and Economics of the Technical University of Gdansk, *i.e. the education of highly qualified specialists who adapt to the changing requirements of European markets[Mission of Faculty of Management and Economics, Gdansk University of Technology]*, assumes the graduates' competence to work in cross-cultural teams. The possibility of achieving such a goal depends on the degree of internationalization of education, to which a very high importance is attached. The agreements on the exchange of students within the framework of the Erasmus programme in force at the Faculty of Management and Economics in the academic year 2013/14 include 73 universities from 17 countries. In addition, also students from outside the European Union are recruited for the graduate and postgraduate studies in management. As a consequence, the classes are attended by students from: Belgium, The Czech Republic, Denmark, Finland, France, Greece, Spain, Lithuania, Latvia, Germany, Portugal, Romania, Sweden, Turkey, Hungary, Great Britain and Italy, but also China, Egypt and Bangladesh. As of 30 November 2013, there were 79 students studying within the framework of the Erasmus programme and 50 students from China at the Faculty of Management and Economics of TUG. They attend, together with students from Poland, the classes conducted in English, while pursuing a graduate programme called Bachelor in Management, or the postgraduate programme called International Management. In their course, the students participate i.a. in such classes as: Organisational Behaviour, Management Psychology and Negotiations, conducted by the authors of the chapter. The main aim of the curriculum of these classes is to present the contents of the subjects, while at the same time due to the actual diversity of the student groups it is possible to achieve the additional purpose, i.e. shaping the cross-cultural competencies. Such additional aim is implemented at each of the successive stages of the topics covered by the curriculum. In their course, the participants work in teams that are chosen in a way conducive to emphasizing and exploiting the diversity of their members. In practice, this means that each team is composed of representatives of several countries, though in some cases, teams that are homogeneous within this respect are knowingly accepted. The team members receive their tasks to execute without knowing what their actual purpose is. E.g. during the Management Psychology course, topics related to interpersonal communication, evaluation processes, decision making and teamwork are covered, while taking into account the influence of personality factors on the methods of action.

Examples of tasks used in covering these issues include:

- during a class on interpersonal communication: exercises indicating differences in acceptable distance between interlocutors or the "How to get there?" exercise.

  In the case of the first exercise, the students have to pass certain information — one of them is informed about the need to approach the information receiver as closely as possible, while breaking the so-called personal distance and watching their behaviour. In the case of the second exercise, all participants receive a schematic map of a maze. The guide, selected from among the participants, receives a map with a plotted route. Their task is to provide every possible word tips to the participants so that they can draw the same route on their maps. This exercise can be carried out in several varieties, with bilateral (asking questions) or unilateral (no questions asked) communication — also in pairs and with the introduction of rivalry between the teams. The main objectives of these exercises are, of course, demonstrating the importance of proper verbal and non-verbal communication, as well as gaining the abilities to adapt the way of providing information to the recipient, gather proper feedback from the participants and cope with emotions during communication etc. In addition, however, attention should be paid to the rising importance of other — i.a. cross-cultural — aspects that significantly affect the way of performing these tasks by students from different countries, using a language which is foreign for them and mastered to varying degrees.
- The following types of tasks are used during the classes on teamwork and decision-making. Problem Solving: students are given a scenario of a problematic task to perform. They solve it individually first and then, after making their own choice of solutions and specific related actions, enter new teams in which they work out a common strategy of solution. This task allows for checking the quality of team work directly by evaluating the degree of team synergy, while at the same time experiencing the differences in individual work compared to cooperation in a team. However, it also allows for observing and discussing the factors of team synergy and defining the specific culture within the teamwork.
- During the classes on the influence of personality factors on the way of taking action a test of team roles is performed in which participants recognize their own style of action and then try to determine the styles of the other team members during teamwork. The most important objective of this exercise is to raise awareness and improve the understanding of the styles of action underlying the choice of team roles while understanding the importance of individual roles for professional effectiveness, the perception of the individual roles by the other team members and the preferred methods of communication, all within a context of cultural differences.

In contrast, during the Negotiations course i.a. the following tasks of Learning by Doing method are used:

- Case study – the students are given a description of a real conflict situation (a staff conflict, a conflict between organizations, an employer-employee confrontation or a conflict having a cultural background) and then carry out an analysis of the conflict in small groups, determining its participants, sources and secondary causes. Next, they choose the optimal solution to the conflict, mainly from Alternative Dispute Resolution methods. They also compare it with the real solution implemented by the conflicted parties. During the audit of the conflict, differences are revealed related to both individual approach to the problematic situation and to the cultural perspective of the discussed issues — for example, the popularity of mediation as an alternative to litigation.
- Role playing – a group of students becomes familiar with scenarios imposing them specific roles and negotiating positions. Next, they develop strategies and tactics for negotiations and begin negotiating. One of the tasks of this type, stressing the differences between students from different countries in a particularly conspicuous way, is a case-study titled: A meeting of ministers. Here, the students take on roles of different ministries and negotiate the allocation of a certain amount of money to proposed investments. This task reveals the differences among national policies related to e.g. education, as well as illustrates the stereotypical behaviours of highly powerful individuals and the national attitudes towards other countries. At the end of the exercise, the trainer discusses the techniques used and evaluates the results of the negotiations, noting the cultural differences in non-verbal communication, negotiation styles and strategies.
- Analysis of a film – the students watch selected excerpts from a film (e.g. "The Negotiator") or a recording of a TV programme (e.g. a political debate), while searching for examples of negotiation techniques used, assessing verbal and non-verbal communication and analysing the factors affecting the result of the negotiations. During the classes interesting fragments of recordings are presented and the discussion based on them shows that in different cultures, different behaviours are perceived as typical. The assessments of the tactics of persuasion and negotiation techniques observed can also vary.
- Interview – the students' task is to conduct an interview with a person representing a different culture than their own or continuously working with people from another culture. The aim of the exercise is to identify cultural differences related to negotiation styles and ways of reaching an agreement. The results of the interview are presented in front of the group with regard to the Hofstede's culture dimensions model.

All of the above methods shape sensitivity and cultural competence of the participants both through the content of the tasks themselves and through embedding them in real and culturally diverse teams. The moderated discussion being a component of each exercise allows for ordering and organizing the acquired experience. It should be emphasized here that according to B.J. Lough (2011), gaining experience through actual contact and practice, preferably linked to the performance of specific tasks or attaining an engaging goal, belongs to the best ways of shaping cross-cultural competences. In addition, attention is paid to the importance of the so-called guided reflection, which with the support of a mentor can facilitate looking at problems from different perspectives, especially in the initial phase of contacts with representatives of other cultures. Such action leads to increasing awareness and knowledge related to cross-cultural diversity, which in turn allows for building the skills necessary for cooperation.

In addition, but only in the final phase of the given course, a topic directly associated with discussing cultural differences with regard to the specifics of a particular subject, such as negotiations or management psychology, is introduced. Also at this stage, all previous experiments and observations made while participating in the classes are summarized and explained based on scientific knowledge. This action also aims at verifying the level of cross-cultural competences held at this stage by the students.

4. The assessment of students' cross-cultural competences after the classes is conducted based on the Learning by Doing method

At the end of the "Negotiations" and "Psychology of Management" courses conducted in the 2012/13 academic year, an analysis of cultural competences of about 70 students who participated in the above described tasks was undertaken. The SWOT analysis was selected as a tool, as being suitable for the delivery of guided reflection and, in accordance with the guidance of M. Higgs presented earlier, shaping consciousness, serving the accumulation of knowledge and assuming its practical use, thereby being able to serve the educational function. The SWOT Analysis is a widespread method of strategic analysis of organizations. However, it is also used in other areas — e.g. as a tool for human resource management, including personnel analysis (Bzowy, 2006), or as a tool for education and training (Helms and Nixon, 2010). The authors used this method to analyse the students' attitudes towards multicultural task groups. The qualitative analysis of internal factors allowed for extracting four categories: "Cognitive diversity", "Knowledge and skills", "Modes of operation" and "Atmosphere of team work".

The examples of factors mentioned by the students upon the completion of the course as strengths (assets) of cross-cultural teams, are presented in Table 1.

Table 1. The strengths and weaknesses of cross-cultural teams as perceived by students

Category	**S** Strengths (assets)	**W** Weaknesses
Cognitive diversity	• different world perspective of individual team members • looking at the problem from different perspectives • multi-faceted look at issues • different interpretations of the same situation • diverse views • better recognition of problems • greater creativity • generating many ideas, • diversity of ideas, taking inspiration	• not understanding the points of view of others by team members • using stereotypes and prejudices • different hierarchy of goals and ways of achieving them • different approach to the perception of staff structures, as well as professional and gender roles
Knowledge and skills	• exchange of experiences • opportunity to learn from each other, to learn from people from different cultures, increasing the diversity of knowledge and skills, a broader range of knowledge • different educational experiences (attended schools) • exchange of experiences • improvement of foreign language skills • exploiting team members' knowledge of cultural differences in the markets	• reluctance to share information and knowledge • language barriers
Modes of operation	• more solutions • introduction of new, creative solutions • complementary work styles • creating comprehensive solutions, also meeting the requirements of different cultures	• conflict of different ways of working, performing tasks, approaches to work, as well as the standards and pace of work • differences in decision making methods, difficult communication, formation of subgroups, competition rather than cooperation, the exclusion of others

The atmosphere of team work	• study of tolerance, diversity, openness, understanding in interactions with others	• mutual incomprehension, problem with the acceptance of differences, hostility, irreverent behaviour, the possibility of the emergence of conflicts, difficulty in achieving compromises, rivalry • differences in shared values, customs or traditions • diversity of rules of building professional relationships • longer time needed for the integration of the team

Source: own work.

It is noteworthy that the strengths and weaknesses of the cross-cultural teams listed in Table 1 strongly coincide with the factors mentioned in the subject-matter literature (Higgs, 1996; Maznerski and Zander, 2001; Miroński, 2010; Jauhari and Singh, 2013; Jabłońska, 2013) . The respondents did not, however, pay attention to organizational factors, such as changes in employee turnover and or the costs of trainings necessary for the integration of the group. Given their lack of experience in this field, that it seems to be understandable.

In the case of the external factors, that is opportunities and threats, the number of created categories, as well as their saturation, were much smaller. This, on the other hand, can be explained with focusing on the intra-team dealings during the performance of the tasks. Nevertheless, it is worth noting that the participants assign greatest importance to factors which can be defined as "external relations". They were related to the impact of cultural diversity of the team on the way it is perceived and evaluated by the external environment. In addition, the factors classified as "organizational" were mentioned, as well as the factors associated with the legislation of certain countries, seeming to have important practical significance.

The examples of factors mentioned by students as the opportunities and threats of cross-cultural teams are presented in Table 2.

Table 2. The opportunities and threats of cross-cultural teams as perceived by students

Category of factors	**O** Opportunities	**T** Threats
Contacts with the external environment	• the possibility to make the external environment interested with a cross-cultural team, gaining approval from the environment, promoting a company as a multicultural organization • availing of the Poles' belief that what is foreign, is "better" • using the multiplicity of human relationships to develop external contacts • easier international contacts • easier adaptation to international standards • acquisition of skills of working in different environments	• mismatching product concepts to the real market • customer, colleague and the whole external environment biases, the resentment of the monocultural environment, discrimination (racial, sexual, cultural) of the enterprise by the customers • no tolerance of the whole external environment for other cultures • closed market, supporting only its own nationals
Legal and financial factors	• EU grants for international cooperation	• legal restrictions of migration, resulting in e.g. difficulties in assembling the team
Organizational factors	• the ease of communication between team members working in different locations, through the use of modern technology	• the calendar – different non-working days • differing time zones in which the team members work

Source: own work on the basis of Eurostat data

The analysis of the results indicates the ease of pointing out the internal factors, i.e. strengths and weaknesses, which were much more available cognitively. On the other hand, listing the external factors, i.e. the opportunities and threats, was definitely harder for the students, which may result from the need to redefine the cognitive perspective upon the analysis of internal factors, as well as from the lack of experience in working in a team and managing a team within a structure of an organization.

At the end of the semester the students were asked to present their opinion on the extent to which participation in activities helped them to develop their cross-cultural competences. A few selected statements of participants that best reflect the expressed opinions are presented below:

- „I have learnt much about different cultures and their style of work. I think I am more tolerant, respectful and have greater view of international groups (…). We need to take the advantages from the differentiation" /Polish student/
- "The classes gave me the opportunity to improve my cultural intelligence. One of the key aspect is empathy, trying to understand why people behave the way they do" /a French student/,
- "I learned how other cultures are working on projects, what is normal for them, how they achieve their goals and the different process of task solving" /a German student/,
- "I have learnt that Hofstede was right, to leave the stereotypes, be open and be respectful" /a Polish student/,
- "I have learnt mainly how differences of culture influence the negotiations, that it is necessary to know this differences" /a Czech student/.

When asked which of the methods used were, in their opinion, most valuable from the point of view of cultural sensitivity, the students assessed all forms of cooperation in multicultural groups, case studies, role playing, problem solving and discussions moderated by the trainer as most valuable.

5. Conclusions

The preparation of employees to work in multicultural teams is a challenge of the global market, whose hallmark is multi-level diversity. The best cultural competency training is working with representatives of other cultures, however, as observations suggest, such approach does not necessarily produce the expected results[4] if it is not at the same time an opportunity for cognitive effort concentrated on shaping positive attitudes. The methods of work with students in international groups presented in the chapter constitute an opportunity for meeting both these conditions. First of all, the tasks developed in accordance with the Learning by Doing method play an active part in the tasks that try to reproduce the professional activities carried out in employee teams. In the course of their execution, the students experience the importance of cultural differences and learn about their impact on the effectiveness of the culturally diversified teams' work. In addition, the results of the tasks are the basis of the discussion and an exchange of views, enabling a reflection which shapes cultural sensitivity. It can be concluded on the basis of the conducted study that cultural sensitivity of students expressed through their opinions may be defined as the perception and acceptance of cross-cultural differences. This is a good starting point to benefit from the knowledge and skills related to actively overcoming the challenges arising from cultural diversity. The conclusion is all the more important that as future graduates of business studies, the students of the Faculty of Management and Economics may have impact on diversity management processes in organizations and promoting cultural diversity in the business environment in the near future.

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Summary

The chapter presents the training methods that can be used to develop intercultural competences which are understood as the ability to make flexible changes in one's knowledge, attitudes and behaviour as a consequence of openness to cultural differences and the ability to cooperate with others, despite the identification of these differences. The intercultural competences are extremely important while working in intercultural teams which are more and more popular at the global market. The mentioned methods like: case-studies, collaborating, role-play simulations, team working, video presentations and others are presented on the basis of authors' experiences while teaching the international groups of students at Faculty of Management and Economics at GUT. The purpose of the chapter is to promote the world-renowned method: Learning by Doing, which is assumed to be the best way to develop competences is primarily taking action allowing for gaining personal experience. There are also participants' opinion presented to evaluate the used teaching methods and learning outcomes. The SWOT analysis was selected as a tool, as being suitable for the delivery of guided reflection and shaping consciousness, serving the accumulation of knowledge and assuming its practical use. The qualitative analysis of internal factors allowed for extracting four categories: "Cognitive diversity", "Knowledge and skills", "Modes of operation" and "Atmosphere of team work" .The students expressed their acceptance for intercultural diversity after being involved in Learning and Doing methods and feel much better prepared to cooperate in international environment.

CHAPTER 3

Evaluation of managerial simulation games benefit in teaching process

Jindra PETERKOVÁ*

1. Introduction

For students of economic subjects, computer simulations are an effective way of teaching. They support the thorough view at the solved problem. They activate the learning process and provide the feedback between the implemented activities of a student and their results. The managerial simulation game used for the simulation of economic processes belongs among active didactic techniques. Unlike passive didactic techniques, the students of virtually created firms get knowledge of influence of the changes made to parameters that influence the complete state of market. It happens on-line, or in a shortened time period (e.g. A quarter year last three months in real life, in computer simulation 10 minutes). At the same time the students learn to communicate with other members of the team. They learn to get the support from other members of the team for implementation of their decision.

The goal of this chapter is to describe the simulation game JA TITAN as an active, didactic technique of teaching and to evaluate its to the pedagogic process at The Faculty of Economics from the students´ point of view.

For this purpose, in the course of three years and after the finishing the managerial simulation game the electronic questionnaire survey was implemented. Students of the first year of The Faculty of Economics took part in it. Significant results of the survey are described and evaluated through the graphs.

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2. Implementation of computer simulation in learning of economic subjects

2.1 Demarcation of computer simulations and their division

Computer simulations enable to research the economic system on a model (Častorál, 2008), (Mildeová, 2007). In quite a realistic way they simulate the process and their results. Simulation models enable to include a number of specific, complex social systems that means feedbacks, delays or nonlinearity. Simulation models create interactive learning environments, through which various experiments, in real time unrealizable, can be implemented. They are used for "What if" analysis is used here, testing the impacts of various possibilities and strategies etc. Managerial simulation games are particularly significant in simulation of economic processes. Managerial simulators enable to simulate certain decision making processes and the subsequent impacts that stem from the decisions taken. A managerial simulation game simulates economic phenomena and conditions (specified parameters of decision making), which a manager has to take into account when a virtual firm is controlled. Through the managerial simulation game, experiments with an economic model are conducted, which represent a selected part of the real economic system (it includes only the selected connections, bounds among elements). Simulation experiments (Tuleja, 2007), (Sterman, 2000) enable to confront and subsequently combine the results and come up with new versions of solutions.

Educators are searching for innovative learning strategies that blend enjoyment with education. Game provides exploration of the claim that playing games can facilitate learning that is deep sustained and transferable to the real world (Ritterfeld and Cody, 2009).

Computer simulations enable to research the economic system on a model (Častorál, 2008), (Mildeová, 2007). In quite a realistic way they simulate the process and their results. Simulation models enable to include a number of specific, complex social systems that means feedbacks, delays or nonlinearity. Simulation models create interactive learning environments, through which various experiments, in real time unrealizable, can be implemented. They are used for "What if" analysis is used here, testing the impacts of various possibilities and strategies etc. Managerial simulation games are particularly significant in simulation of economic processes. Managerial simulators enable to simulate certain decision making processes and the subsequent impacts that stem from the decisions taken. A managerial simulation game simulates economic phenomena and conditions (specified parameters of decision making), which a manager has to take into account when a virtual firm is controlled. Through the managerial simulation game, experiments with an economic model are conducted, which represent a selected part of the real economic system (it includes only the selected connections,

bounds among elements). Simulation experiments (Tuleja, 2007), (Sterman, 2000) enable to confront and subsequently combine the results and come up with new versions of solutions.

Educators are searching for innovative learning strategies that blend enjoyment with education. Game provides exploration of the claim that playing games can facilitate learning that is deep sustained and transferable to the real world (Ritterfeld and Cody, 2009).

At present, there are dual types of managerial simulation games that have been used in learning at the Faculty of Economy:

- Managerial games, which can be immediately implemented after installing it on the computer system without any changes to be done (JAN TITAN e.g.).
- Managerial games, which are created by a particular institution (school, counselling and educational firm) after purchasing applicable software (software program VENSIM e.g.).

Both groups of the managerial games have their own particularities, which are different to each other, mostly in the decision making parameters (the levels of decision making), in graphic options (use of graphs in decision making), in the selected product commodity and in the acquisition cost of the particular simulation (Aldrich, 2009).

2.2 Steps implemented by students while playing JA Titan game

The implementation of the managerial game JA Titan is based on the students` team work. Each team has to consist of at least 2 students. Before the start of the game, the students create a virtual firm, set the management and determine the roles of the particular members. The firms produce and sell Holo-Generators and strive to achieve the firm´s balance and surpass the competition in terms of profit, sells and market share size.

Eight virtually created firms can take part in each game. Those firms create the market of Holo-Generators at the same time. They offer the same product there, which means they are competing firms.

The goal of the management teams is to control virtual firms so that they achieve the top points of the performance index (PI index). This index reflects the value of its shares on the market (so called stock market index). PI index includes six factors of entrepreneurship (total profit, potential demands, productivity, growth, market share) that are important in evaluating the performance of the firms. Due to the fact that all the firms start at the period O with the same performance index (100), all these factors are the same in individual firms.

During the control of a virtual firm, the teams of students decide about economic parameters, for instance the price, the quantity of produced items, the expenditures on marketing, capital investments, research and development, the expenditures on charity, see (picture 1).

Fig. 1. Plan box

source: http://titan3.ja.org

Students change values in the Plan box based on your understanding of the advice. When making decisions, the students' teams have to take into consideration the simulated situation in economy, economic scenario respectively. That means students make decisions in a situation, which is related to a product becoming older on the market, the entry of a new product on the market or the entry of a foreign competition.

Such decisions, made by particular teams, are automatically recorded after each round, with the standings of each team, according to the achieved PI index. The number of the initial rounds is different.

The bases of the right decision making of the teams are the simplified financial statements, which provide information both about the firm (inform about economic situation in the particular firm) and the situation in the branch or the competition (inform about economic situation in the production branch of the particular product). Feedback between the set decision and achieved result of the firm is provided using these statements, see (picture 2) Company report and (picture 3) The industry report.

Fig. 2. The company report

source: http://titan3.ja.org

The Company report displays all company-specific details. The Company Report consists of three financial statements and an Operations Report. After closing a period, each firm has a confidential report of the results in particular period. That report is divided into the following parts: Income (profit and loss), Balance (balance sheet), Production, Marketing, Investment and Cash Flow.

Fig. 3. The industry report

source: http://titan3.ja.org

The Industry report allows students to view all companies' PI scores, sales, net profit, retained earnings, unit retail price, and market share. By clicking the Units, Dollars, Productivity, and Economics tabs on the left, students can view pertinent details.

The statement of the situation in the branch provides an overview of the state of the whole branch and compares the performances of particular students` firms.

Each company receives and Industry Report and a Company Report after each round of decision. Each period represents three months.

During the course of the managerial simulation game students broaden their knowledge and gain new experiences through mutual interaction among the members of the team, interaction among particular teams that make up a specific market. At the same time they check the impact of economic parameters on the final result. Some of them have immediate, short-term impact, for instance the selling price or long-term impact, for instance research and development or delayed, long-term impact, for instance capital investments.

In the managerial simulation game JA TITAN, we can describe general process of the implemented steps by students` teams that are listed in (picture 4).

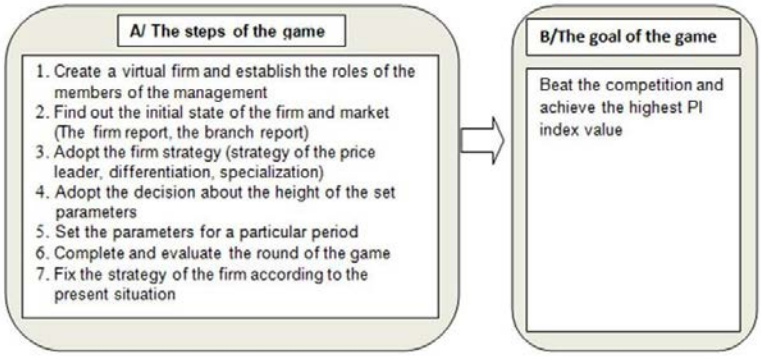

Fig. 4. The steps implemented by students in the managerial simulation game

2.2.1 The role of the educator (moderator) of the game

Educators provide with the theoretical introduction of the applicable economic scenario. They point out which decision making parameters have big influence on the final result. All the steps of individual rounds, with the needed calculations included, are processed as methodical instructions and you can find them in LMS- Moodle.

Methodical instructions are processed for each round of the game. The students count the costs, determine the size of their investments according to a set formula, monitor the growth or decline of market prices etc. A part of the methodical instructions is displayed in picture 5. The pedagogue manages the time of the game and the time when a round shall be ended. The round is ended at the moment of setting the economic parameters to the simulation.

While round is ended, the pedagog evaluates the teams according to the established criteria and comments on the achieved results in each firm, considering the PI index value and revenues since the beginning of the simulation.

THE METHODICAL INSTRUCTIONS FOR EXERCISE 1

Identify pricing, utilization of production capacity, marketing, capital investments, research and development 1

The name of the firm:

Management (the personnel):

The product: Holo-generator

Based on the firm report for the period 0, please respond to the following questions.

1. Decide, which pricing strategy your firm will follow. Why did you choose this strategy?
2. Calculate your total costs per unit: **fixed costs per unit** (marketing + amortizations + research and development + compensation + charges for supplies ± interest)/ number of units + **the unit manufacturing costs** (it depends on capacity utilization and capacity itself) = **the total price per unit**. The total costs per unit?
3. What price will you require for a holo-generator? (The price should be higher than your total costs per unit).
4. Use the firm report from period 0 and fill in the columns for period 0 in the following table.

Operation	Period 0	Period 2
Ordered		
Manufactured		
Sold		
Supply		
Capacity utilization		
Price per unit		
Costs per unit		

5. What was your gross margin in period 0? If your margin is higher than 35%, your price is probably high enough to cover all expenditures.
6. Can you lower your costs (and increase your gross range) in a way that you will establish the volume of production to 80% of the factory capacity. How many holo-generators can you produce at such a volume? 0.80 x factory capacity = holo-generators
7. Do you think that at the production volume 80% of the capacity and unchanged price you will sell all the holo-generators that you produce? Justify your answer.

Fig. 5. The methodical instructions

3. Evaluation of the benefits of computer simulation games in the learning process

Evaluation of computer simulation game was conducted by an anonymous electronic questionnaire in 2011 (150 students). Evaluation was done by students, who were using the computer simulation JA TITAN in the learning process. Through the survey we managed to evaluate managerial simulation game for further study and profession. At the same time we managed to evaluate the benefits of verifying economic dependency through a game and the benefits of team work during the implementation

of the managerial simulation game. The results of significant findings are described and graphically evaluated in the following paragraphs.

The majority of the questioned students in 2011 (62%) evaluated the managerial simulation game as a popular and helpful game for further study, especially by enabling them to understand the dependencies of the selected economic variables simulated in the game (examples of the answers: the implementation of the simulations enabled to verify the functioning of the market, to verify how the firms work, cooperation in teams, competing among students´ teams etc.) see (picture 6).

At the same time students (38%) evaluated the managerial simulation game with regard to further profession as beneficial, too (examples of the answers: The possibility to develop own personality, not just accepting the theoretical knowledge, a great tool to control a real firm etc.) see (picture 7).

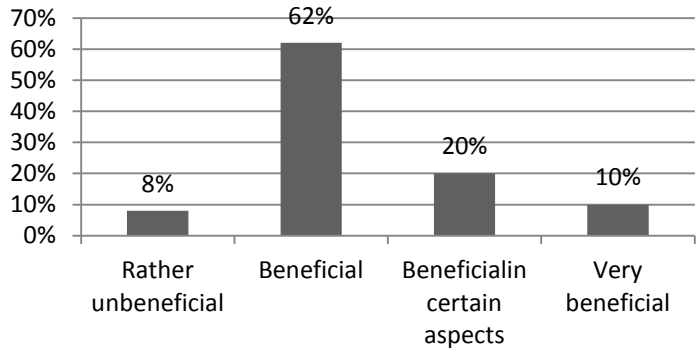

Fig. 6. The benefits of managerial simulation games for further study

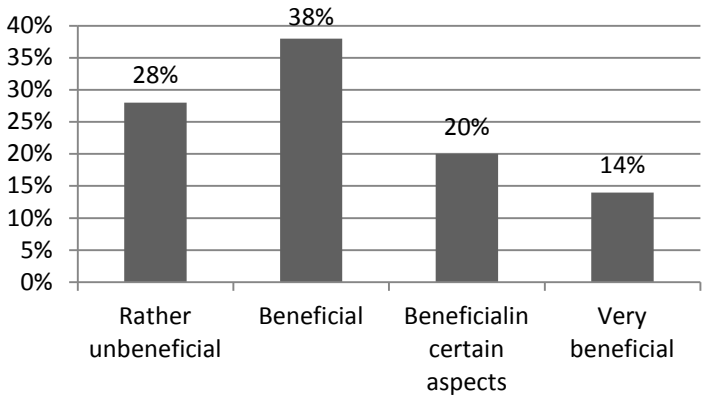

Fig. 7. The benefits of managerial simulation games for further profession

The majority of students (82%) consider managerial simulations as beneficial to understand mutual dependencies among economic variables (examples of the answers: the implementation of the simulations enabled to understand the functioning of investments in an enterprise, to gain practical skills in managerial decision-making, complex concept of the solved problem – connection of the management, micro economy, calculation of a strategy etc.) see (picture 8).

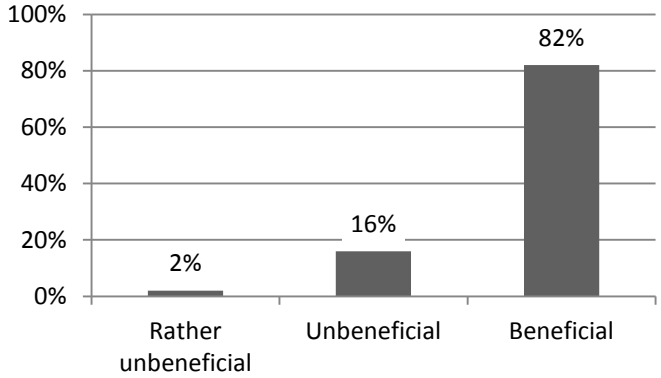

Fig. 8. The benefits of managerial simulation games with regard of understanding mutual dependencies among economic variables.

Team work was perceived by students as useful, helped successfully implement the decision (more than 90% in both years) see (picture 9). At the same time it taught some students team communication and the skills to enforce their decisions. 2-3 member teams are considered to be optimal.

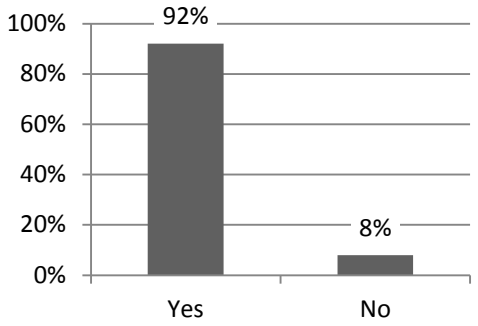

Fig. 9. The benefits of team work

The summary of partial results of the questionnaire showed that majority of students evaluated the work with managerial simulations as beneficial for study and further profession. Managerial simulations enable to learn about economic laws of the market through a game.

4. Conclusion

It is evident that using managerial simulation games is beneficial in teaching of economic subjects. Simulation games represent an ideal way of verifying and learning through a game. They activate the learning process and provide the feedback between the implemented activities of a student and their results. The implementation of the simulation game JA TITAN was described in detail, including the learning process with the role of the educator. The simulation enables to control a firm that produces and sells Holo-Generators. The decision-making is derived from the economic data, which is a part of the firm report and branch report. The goal of the students` teams is to beat the competing teams and achieve the best economic results in their virtual firm in terms of the highest PI index.

The right decision-making of the students in individual steps in the game JA TITAN is supported by developed methodical instructions that are inserted into the Moodle before each seminar. They include individual steps to be solved by the students. Then they can change the economic parameters of the game. The survey showed that for students, who finished computer simulations, the simulation game is perceived as beneficial from the study and further profession point of view. It enabled the students to understand mutual dependencies among economic variables. At the same time, the students, who were involved in the team game, developed communication skills. I suppose that computer simulations should be supported and used by educators in teaching of economic subjects.

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Summary

For students of economic branches computer simulation are an effective means of teaching to support the entire view of solved problem. They activate learning process and ensure feedback between activities realized by a student and his results. A managerial simulation game used for economic processes simulation belongs to active didactic methods. In contrast to a passive didactic method, the students from established virtual firms gain knowledge of the impact of changes realized in parameters, which have influenced overall state of the market online, rather in shortened period of time (e.g. a quarter of a year takes three months, in a computer form it can be ten minutes). At the same time the students learn through a game to communicate with other members of the team and gain support of their decisions implementation. Realization of the game is based on teamwork of students. Before the game begins, the students will create a virtual firm, nominate management a set of roles enacting by particular members. The number of created virtual firms is depending on the type of game. Virtual firms at the same time create a market, in which the same products are offered – the issue is that the firms are mutual competitors. Student´s team manages virtual firms, so as they beat their competition and overtake the level of profit, sale and market share. It means that the best is the virtual firm that achieves the highest value of index. It can be usually index reflecting company´s share value in the market (so called stock exchange index).

The aim of this chapter is to evaluate the benefit of managerial simulation games utilized during pedagogical process, in the process of education from students´ point of view. For this purpose, an electronic questionnaire survey with the Faculty of Economics (master´s degree, participating in the managerial simulation game) have been realized within two years period. Significant results of this survey are described and evaluated in graphs.

CHAPTER 4

Use of business imitation games in teaching innovation diffusion

Mārtiņš DANUSĒVIČS*

1. Introduction

Author proposes a business imitation game "Innovations and imitations" as a tool for engaging business and economy students in exploration of innovative products and their diffusion in the marketplace. A business imitation game can be a game focusing primarily only on one aspect of a business environment (Faria, 1987), so in context of this chapter this game is based on Bass diffusion model (Bass 1969). This model was developed to analyse the pace, at which the demand for new innovative products increases by time. By analysing different types of innovative products certain parameters can be calculated, that allow modelling the tendencies of the market to consumer innovative products and impeding imitations of this product. Business imitation games can be used to analyse the behaviour of market participants in various conceptual situations (Schilling, et al., 2006), thus they can be used for assessing student capabilities.

2. Use of business games in education

Business imitation games are a crucial part of business education. Different types of games have been developed ranging from computerised and non-computerized (Keys & Biggs, 1990) depending on the use of software for calculating external environment

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factors and result of player actions. Unfortunately, non-computerised game do not allow for a higher complexity of simulation, but personal experience of the author implies, that these games make it easier to convey a certain educational idea to the players.

Another type of classification is based on functional imitation. Concept based games are based on a certain functional area of business; they do not integrate several levels of an enterprise. For example, a business game can simulate logistics planning of a product, influence of pricing on the demand, changes in number of customers based on marketing activities. The opposite are total business games, imitating all the functional levels of a company (Washbush & Gosen, 2001), for example, integration of marketing, finances, logistics and other areas in one game. Such an approach is more attractive for conveying the managerial difficulties to the students, but takes more time and effort to play. Business games can be classified based on the aim of research. Business games can be based on research of a certain economic area transformed into a game. The analysis of market is the source, the game is the outcome of the process. At the same time the game itself can be the source of research, by playing a business game the moderator can research the behaviour of the players, the players can assess their own behaviour after the game. The game can be a part of not just understanding the functionality of a certain economic area, but also as a tool for researching the behaviour of the participants themselves. Business simulation games can be likened to management laboratories, a tool for behavioural experimentation (Wolfe & Castrovanni, 2006).

Additional realism can be added to business simulation games by adding seasonal and cyclic fluctuations. Simulation games can include the four marketing mix elements, use of the product (4P – product), facilitating the recognition and advertisement, price effect (4P – price) on performance characteristics. In games including price elasticity, assuming other factors being equal, the price changes affect the sales volume. Sometimes this influence can be non-linear. Marketing mix element – the placement, is used less frequently in simulation games (4P – place), since it is usually not so easy to imitate. The promotion of products (4P – promotion) sometimes is used in the form of possibility to use different marketing campaigns to simulate the correlation between increased marketing costs and revenues. Simulation games are not usually defined with market variations. Simulation games are widely used in the management of other aspects, such as manufacturing, logistics, finance, research and development.

Business imitation game “Innovations and imitations” is a concept game concentrating on demand forecasting for new products. Since the business game uses calculations to determine the total demand for products, it is a computer based business game.

3. Bass model

This game is based on the Bass diffusion model develop by Frank Bass since in 1963 and developed in numerous publication in following years. It was inspired by the concept of word-of-mouth impact on bolstering demand for a new product. The model is partially based on the concept that probability of adoption of a new product is functionally tied to number of consumers, who have already adopted the new product. In his work Bass envisioned the innovators and imitators as consumers. Innovators are the first, who start using the new product. Later on imitators are imitating the behaviour of the primary group – the early adopters of the product. In the game "Innovations and imitations" the imitation term shouldn't be mistaken for the same concept used by Bass. It is used as a competing product providing an imitation of the original product.

4. Game concept

The game is currently called "Innovations and imitations", and uses Bass diffusion model as a base tool for calculating market demand for innovative and imitation product. The game principle is based on introduction of 2-3 innovative products to the market. The students, participating in the game, usually form teams that significantly outnumber the number of innovative products. As a result, only one team can produce an innovative product, which results in the rest of the team to perform the role of imitators. Every year is played as a turn, a typical game can consist of 6-10 years. Each turn teams have to decide what type of products they are going to produce. After production decisions have been met and production expenses covered, the total demand for the year is made publicly known. Every team calculates amount of product sold depending on available demand and number of teams competing for the same product. Demand is split proportionally between teams producing the same product. Any produce left over is disregarded as not sold and can't be sold on following years.

Each year teams can change the product line they are producing, thus reacting to the changes in market demand and competition.

The ultimate goal of the game is to have a higher bank balance at the end of the game. Value of assets, patents, production surplus is not taken into account.

5. Game mechanics

Business simulation game "Innovations and imitations" is a computerised game, that uses the software only for providing relevant information for the players. The teams do not require a computer to make their decisions and perform their tasks. Depending on the previous experience of the players, they can calculate their financial balance themselves or use the output of the program. Up to 10 teams can be participating in the game. A higher number of teams results in decreased income for each team, making the game less appealing. The number of teams should be at least the double of

innovative products used in the game. It is important to provide at least two teams per product plus one additional team. The reason for this proportion is to ensure that every product has at least one team to produce the imitation of it and an extra team to provide competition in any of those markets. If the number of teams will be lower, the game will lose attractiveness to the players because of lack of competitive tension.

A virtual market is prepared for the game, characterised by a certain population of customers, who could be interested in consuming the new product. The population can be constant, but a random cyclical change of population can be generated, to simulate a more realistic situation. Game moderator announces the approximate number of the total population to encourage the players to estimate the possible distribution of demand for the gameplay.

The moderator of the game prepares 2-3 innovative products as patents to be purchased. Only one team can purchase a certain patent granting them unique rights to produce products of that certain type. The patents are sold in an auction. Different types of auctions can be used, as English auction, Dutch auction or sealed first-price auction. Since there will be teams not capable of purchasing a patent, those teams are forced to produce imitations of any of the innovative products.

Each product has certain characteristics – ease of imitation, demand growth, retail price, first year demand assessment, production costs. Ease of imitation represents the speed of imitators gaining market shares. In the context of Bass model it is used as the parameters *p*. Biological or medical products should have a lower ease of imitation, as opposed to financial or ITT products. Demand growth represents the speed, at which the total demand for the products reaches the saturation point. Products with a lower demand growth are suitable for a more long-term strategy and vice versa. First year demand is based on the results provided by the model. It is recommended to randomly increase or decrease this number by 10%, to illustrate the possible margin of error in surveying customers for their willingness to buy a new product. Each product has fixed and variable production costs.

The total demand for each product type is calculated as follows:

$$TD^k{}_t = P_t NPD^k{}_t$$

where:

$TD^k{}_t$ – total demand for product *k* on year *t*;

P_t – population in year *t*;

$NPD^k{}_t$ – new product demand share of product *k* on year *t*, based on Bass model and random noise.

The result imitates an increase in the number customers, who are willing to purchase each product. For products with slow demand growth is steadier, a stable number

of customers can be predicted. If the product has a fast demand growth, it imitates products that gain their popularity peak very fast – in a year or two. After that the demand for the product declines steadily. During the game products with different characteristics are offered, to foster student understanding of different levels of innovation diffusion. An example, as seen in figure 1, illustrates a product with slow demand growth and medium demand for imitation.

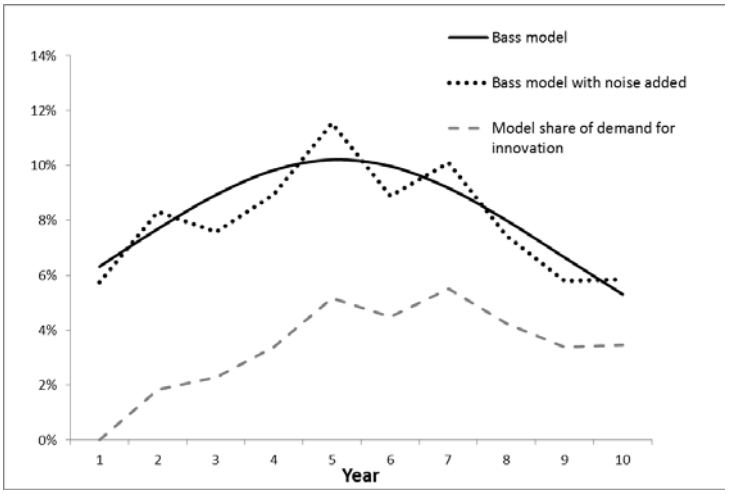

Fig. 1. Modelled random dynamics of demand for a product with low ease of imitation and slow demand growth

The total demand behaves differently for each type of product used in the game. This is implemented to illustrate different innovation diffusion for electronics, household goods, services or other types of products.

The share of customers willing to buy the new product of a certain type is calculated using the model proposed by Bass with addition of random noise, to simulate random events similar to real-life situations:

where:

$$NPD^k{}_t = \frac{p(p+q)^2 e^{-(p+q)t}}{(p+qe^{-(p+q)t})^2} \cdot R$$

p – innovation coefficient;
q – imitation coefficient;
R – random number in a predefined range.

The parameters p and q can be calibrated to illustrate a typical behaviour of innovation

diffusion for different products. Typical ranges used in games by author varies between 0,05 and 0,20 for parameter *p* and between 0,3 and 0,6 for parameter *q*

$$ImD_{ct}^{k} = \frac{TD^{k}{}_{t} I_{t}^{k}}{n_{t}^{k}}$$

Where:

$ImD^{k}{}_{ct}$ – total demand for imitation of product *k* on year *t* to company *c*;

$I^{k}{}_{t}$ – imitation rate of product *k* on year *t*, based on a normal distribution with a pre-set range of imitation share and growth rate; The mean and standard deviation in the normal distribution is chosen to illustrate the kurtosis of demand growth for imitative products;

$n^{k}{}_{t}$ – number of companies producing product *k* on year *t*.

On a typical game author uses imitation of a biological product, financial product and ITT product. These products have different tempos of innovation diffusion (Figure 2). It allows students to concentrate on different strategies, based on their preferences or intuition.

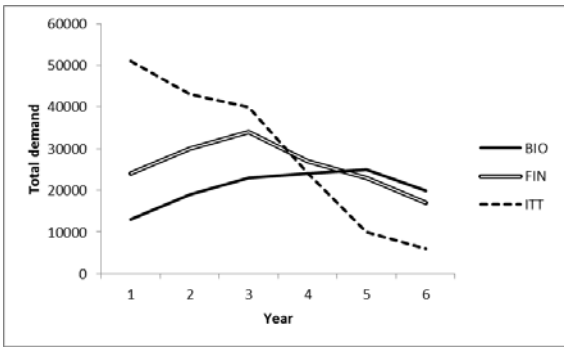

Fig. 2. Modelled random total demand for three innovative products

The demand for the BIO product is modelled with a low ease of imitation and slow demand growth. This product is a long term investment and is mostly profitable throughout the game. FIN product has a high ease of imitation and medium demand growth. As a result this product is most attractive for imitators. This results in high competition and a seeming advantage becomes a disadvantage, teaching the students to be vary of popular markets. The third product – ITT, has a medium ease of imitation and a fast demand growth. This product peaks on the first year, and the demand is declining for the rest of the game.

An important part of the game mechanics are the imitations. Unlike innovative products available only to the owners of patents, any team can produce any type of imitation, competing with other imitators in the market. This makes being an imitator a more challenging task. To compensate for the increased risk, imitations are cheaper to

produce (50% lower costs), and their retail price is only a little bit lower (10% price decrease). This makes producing imitations more profitable than producing innovation, if initial investment of purchasing a patent is not taken into account.

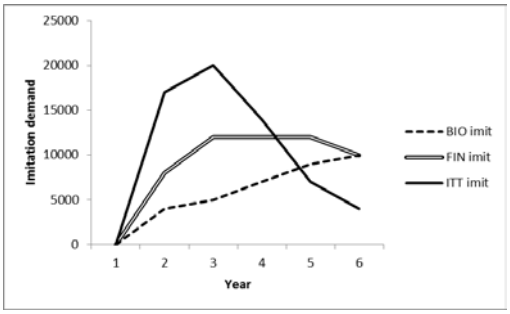

Fig. 3. Modelled random demand for three imitations of innovative products

The demand growth is unknown to the players until the specific year is played as a turn. Each team must plan their production orders in advance. It leaves the teams with a risk of overproduction, leading to extra costs and useless goods, or shortage of produce, causing lost income.

The game usually ends at a previously defined year. To make a game more complex and to allow students to reapply their newly gained knowledge, a game of several cycles can be played. The moderator of the game can introduce new patents in the middle of the game. For example, an electronic product patent can be bought on year 6. Since students have become familiar with the mechanics of the game, they will have a change to correct their strategies on second innovation cycle.

6. Learning outcome and application of the game

The game has been a success in increasing student awareness of new product market development. It has been played in Latvia with High school pupils, students in Bachelor and Master economic and business management programs. The game is flexible enough to be adapted for players with different skills and knowledge. A more analytical approach can be used with MBA students by introducing an economic forecasting element. Also, from the point of view of academic didactics in the process of studying business administration sciences, these simulation games have an even increasing importance. In modern study process the perspective is gradually changing from a lecturer-oriented to student-oriented process (Garris, et al., 2002). The business simulation games are perfectly suited for this new approach.

A typical game-play is characterised by three phases. The first phase is the initial fight for the innovation products. In this phase players of the business game get familiar with initial planning and decision making in a situation of imperfect information. The most typical reaction is overestimation of future income and increased spending on initial investment, usually leading to a disadvantageous economic position. Some

teams learn to overcome this burden by selling the patent to other team at an advantageous price, in the same time learning bargaining skills.

Table 1. Typical yearly profit for different product types excl. investment, EUR

	Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*	*Year 6*	*Year 7*	*Year 8*	*Year 9*	*Year 10*
Product with slow demand growth and low ease of imitation										
Innovators	60 345	48 884	57 956	50 373	55 632	38 058	27 076	26 901	8 690	8 669
Imitators	-10 000	9 618	23 410	32 828	51 508	49 185	46 450	52 508	30 667	31 964
Product with medium demand growth and high ease of imitation										
Innovators	269 023	190 927	178 297	150 699	110 873	59 738	29 360	16 245	6 730	-1 079
Imitators	-5 000	65 086	96 391	121 978	127 665	94 917	63 817	47 462	31 226	15 149
Product with fast demand growth and medium ease of imitation										
Innovators	353 911	239 429	119 336	41 939	-4 106	-18 279	-26 206	-27 923	-29 280	-29 659
Imitators	-15 000	142 167	118 014	78 639	31 648	12 316	-4 384	-8 489	-12 600	-13 829

The second phase is characterised by increased activity of imitators. Typically majority of teams imitate the product with the fastest demand growth. This results in high competition in one type of products and low competition in less demanded product markets. As a result teams working in lower competition gain higher income than teams, who choose high demand, high competition markets. As can be seen in the summary of expectable profits in table 1, there are products that become unprofitable in the middle of the game. It is important for players to notice this tendency, even if the increase in the number of customers demanding the product appears to be still satisfactory.

Third phase is a stabilising phase, when teams split the market in similar groups whether by self-management or mutual agreement. This phase demonstrates the ability of the groups to communicate between teams with different interests.

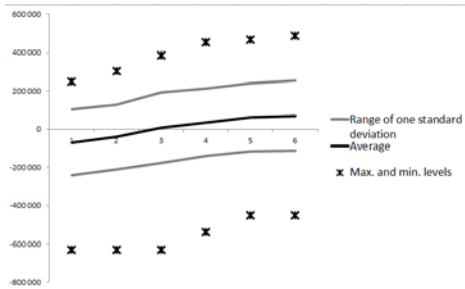

Fig. 4. Summary of team profit from seven business game runs

Learning outcome can be divided into three primary areas. Widest area is the promotion of economic analysis skills. Students have to forecast the market demand based on the limited information available. In this game quantitative forecasting is useless, since there is very limited amount of data available. So students have to use

the concepts of innovation diffusion, to assess the market size, demand growth and the expectable point of market saturation.

Another area of economic analysis is planing of cash flow. Since teams are competing in an auction for patents, they have to calculate the expectable income, to determine the highest bid, that is economicaly feasible.

Second area of learning outcomes is competion analysis. Students need to understand behaviour of competitors and predict their future moves. Since companies in the business game can change their poduction lines, it is advantegous to produce a product line with lowest market saturation (so lowest competion level). This area is closely coupled with the third area of learning outcomes – improve communication skills. Diminshing returns ir year 2 and 3 of the game force the teams to start communicating. When teams understand the trends of the leading products, competition in certain in certain product markets increases signicifally. So teams have to find a way to partion the market, to maximise the profit or avoid further losses. In most cases the teams are not capable of doing so. Such a result is even advantegous, since it allows the game moderator to illustrate the lack of self-regulation and the resulting income loss for all teams. Sometimes teams can be tought, that the best strategy is that of doing nothing.

Post-game analysis performed by players of the business game show increased understanding of market behaviour. Students usually recognize the complexity of making business in risky environment, mostly by mentioning lack of clear thinking and overtly high spending at the beginning of the game. Common lessons learned by students in their post-game analysis:

- Overbidding in the initial auction for patents. Income later gained by producting the respective goods didn't cover the expenses of buying the right of producing these products.
- Following mass histeria. Switching to producing of most demanded goods resulted in high competition.
- Manufacturing too much products. Increased manufacturing costs and a unproportionally high share of fixed costs per unit

Adding post-game analysis and integrating the results of the game in further learning of topics linked to demand forecasting has been observed as a valuable addition to the study process.

7. Conclusions

1. Business imitation games are a modern, important tool for use in business education. They provide a platform for conveying theoritical concepts and market data to students in a competitive environment

2. Bass model is a very appropriate concept to be used in a computerised imitation game, since it is based on market growth, it can be calibrated to simulate certain product groups.
3. Business imitation game "Innovators and imitators" shows an average loss at year 5 for innovators and year 7 for imitators of fast demang growth and medium ease of imitation. Students can be challenged to avoid losses by cooperating in the virtual marketplace.
4. Previous games result in a average time of return on investments of 3 years, at the same type more than half of teams use to stay with a negative balance for the duration of the game. This result can be used for further post-game analysis.

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Summary

The business imitation game "Innovations and imitations" is a convenient way of conveing the principles of uncertain demand for new, innovative products, to students of business and economic programms. It is a convenient tool for teaching in courses spanning topics such as business model development, innovation methods, market analysis, forecasting methods and other. Experience in the University of Latvia has shown increased interest of students in topics of demand forecasting and innovation difusion following game sessions of "Innovators and imitations". The game in its current form is based on a generated market growth by Bass model. Moderators of the game can calibrate the main indicators such as market size, growth rate, adoption rate. Market shares are modelled depending on the behaviour of the players. Increased competions results in loses for everybody, leading to an understanding of market forces and need for cooperation amongst students. Further developments of the game should include use of past cases of difusion on different real-life innovations, to add increased realism to the game.

CHAPTER 5

Experiential learning as an important tool in contemporary business education

Mirosław JAROSIŃSKI*

1. Introduction

Business environment has always been changing but nowadays its changes have taken an unprecedented pace. Business environment has become more global, more culturally diverse, more technologically advanced and more turbulent than ever. As a result businesses need their managers to be better prepared not only for today but also for the future. When recruiting business schools' graduates firms expect them to have lots of skills like e.g. technological skills, project management skills, good communication skills or intercultural skills. Businesses also expect their new employees to be able to work in teams which are more and more often virtual teams where the knowledge how to use new communication technologies is essential.

As a result of the environmental changes business schools change the way they educate students to stay competitive on educational market. To prepare students for the future employers' needs business schools take efforts to make their education more practical, more business oriented. In consequence business schools all over the world adopt experiential learning methods which have become an important tool in contemporary business education.

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The objective of this chapter is to present various experiential learning methods and discuss their advantages and disadvantages in general. First the idea of experiential learning will be explained and experiential learning methods will be positioned among other teaching methods in business education. Then a description of several experiential learning methods will be provided. The chapter will end with a conclusion referring to advantages and disadvantages of experiential learning methods.

2. Experiential learning

According to Kolb learning is the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience (1984, p. 41). In this process the learner and the teacher may take different roles. Traditional teaching methods concentrate on a teacher as an educator who speaks on behalf of the experience and tells the students what they should do, what they will learn and how to apply this knowledge in the future (Estes 2004, p. 148). Students' task is to memorise what they have read in handbooks and have heard during the lecture. If the lecture has been illustrated with some graphs, schemes, tips written/drawn on a blackboard there is a higher chance students will remember more according to the famous Glasser's quote: we learn 10% of what we read, 20% of what we hear, 30% of what we see and 50% of what we see and hear (www.experientiallearning.ucdavis.edu/tlbx-links.shtml, accessed on January 22, 2014).

The opposite approach is the student oriented teaching process in which students are involved in various activities which are relevant to their interests and needs. Students become more engaged in learning and reflect more on what they learn and how they learn (Weimer 2013, p. 15). They learn through investigation, choice of information, analysis and discussion. In this approach teachers open discussions, bridge students' observations, stimulate and provoke thinking (Christensen et al. 1991, p. 11). The student centred approach is closely associated with experiential learning.

Experiential learning is a process of constructing knowledge involving four steps: having a concrete experience, reflecting upon it, conceptualising it and actively experimenting with this new knowledge (Kolb and Kolb 2005, p. 194). In other words this is learning by experience with a very strong role of reflection upon it. It happens in a cycle because the knowledge acquired in the process is used in active experimentation which creates new experiences upon which one can again reflect.

Student's role in the process is central because it is him/her who will grasp and transform the experience into knowledge that he/she will apply later in professional life. The role of a professor is to create an opportunity for having the experience and help a student reflect upon it through some feedback (Figure 1).

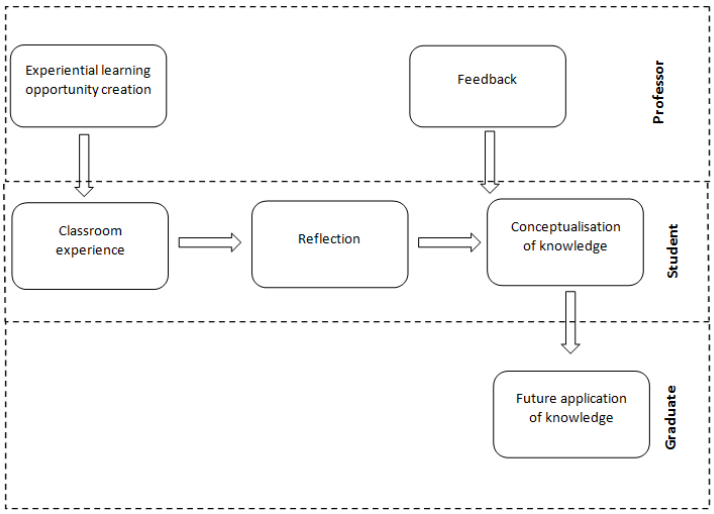

Fig. 1. Source: Own work based on Kolb's idea of an experiential learning process.
Source: Own work based on Kolb's idea of an experiential learning process.

The general process depicted in Figure 1 however is not based on a cycle. The knowledge acquired through the classroom experience may be used in another course which builds upon the previous knowledge but first of all this knowledge will be applied in professional context by the future graduate. In some cases the graduate may help the professor to create another experiential learning opportunity, which often is the case, thus closing the cycle.

The more the classroom experience is close to real business life the knowledge created through it will be more useful in a student's future business career. In this context the so called project-based learning may be very useful. Project-based learning takes the interests of the students as a starting point of an exercise that is built around those interests in a form of a project (Furman and Sibthorp 2013, p. 18). Since business students are interested in operations of actual businesses any project that is relevant to real business activity will be of interest to them. When the project's content contain educational aspects it will be a good experiential learning tool. The more so as the present generation of students prefers learning through concrete examples and with the help of modern technologies than using textbooks and readings that you have to study in the library (Kozloski Hart and Mrad 2013, p. 76).

Experiential learning exercises help students understand how theoretical concepts work in practice and how skills and concepts learned in different courses correspond to one another. This integration of knowledge helps them find better solution to solve their experiential tasks and take better business decisions in the future (Kozloski Hart and Mrad 2013, p. 77).

All types of experiential learning projects catch attention and provokes high engagement of students and according to Glasser let them *learn 80% of what they experi-*

ence (www.experientiallearning.ucdavis.edu/tlbx-links.shtml, accessed on January 22, 2014). They also make future graduates better prepared for challenges of business life.

3. Experiential learning among other teaching methods

Over the last few decades professors in business schools had been making efforts to attract students' attention with other methods than only lectures and readings. They were opening classroom discussions on various topics, introducing case studies, inviting guest speakers who made company presentations and/or spoke about certain aspects of doing business. This departure from teaching pure theory in favour of other methods closer to business practice meant a shift from professor/instructor concentrated education to student and task oriented teaching process (Figure 2).

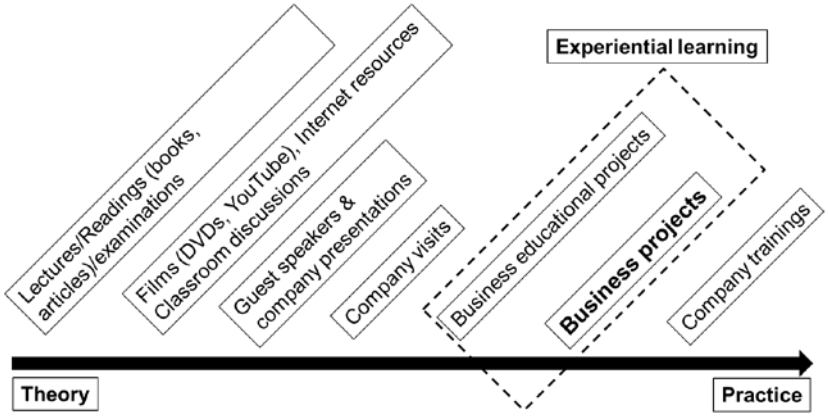

Fig. 2. Teaching Methods in Business Education
Source: Own work.

Technical progress was acting in favour of the professors who wanted to intertwine their lectures with some demonstrations. A wide selection of short films presenting firms, their business achievements or problems became available on VCR tapes, then DVDs and eventually on YouTube. Nowadays Internet resources of various kinds (like eg. data bases, company websites or interactive maps) open lots of opportunities for activating students in a classroom. Traditional case studies are very often supported with Internet resources including CEO interviews or supplementary data.

Company visits are also an effective teaching method. A visit to a company site, observation of the production process and chance to listen and ask questions to company managers is an unforgettable experience for many students. If the company visit is closely related to a topic discussed at a business course and ends with appropriate teacher's feedback it guarantees a successful learning effect.

The most practical knowledge a student gets during a company training or traineeship. This is however a supplementary activity to the course of studies rather than

teaching method, although very important in business education. What is closest to practice and at the same time can be a part of course work are various experiential learning methods described in the following section.

4. Experiential learning methods

Experiential learning methods have been divided here into two main groups: business educational projects and business projects. This division is based on the level of business involvement in preparation and carrying out the tasks. Most of business educational projects need none or minimal business involvement while all business projects require full business involvement.

4.1. Business Educational Projects

Typical business educational projects include classroom exercises and tasks, case-studies, case-based projects, virtual business simulation and short study programmes/visits abroad.

Classroom exercises and tasks are kinds of simple tasks in which students have to discuss business problems individually or in cooperation with other students, orally or in writing. The usual type of this kind of assignment may be writing a business plan for a start-up of your own, or planning the production process of a certain good taking into account certain circumstances and limitations. Such tasks may include role plays in business negotiations where all the actors have certain roles assigned. The exercises and tasks usually reflect events taking place when doing business but are rarely based on real situation.

Case-studies are more advanced (in a sense of practical approach) classroom exercises. Case-studies contain a description of a specific business situation and a set of questions students have to answer on the basis of information provided in the text. Case-studies usually describe a real situation from the past but they may also refer to imaginative situation. The more realistic the description is the more students are engaged in solving the case. A necessary part of a good case-study is at least short information on how the problem was solved in reality.

Case-based projects are projects based on a case-studies prepared on the basis of data provided by a real companies which describe their current situation and problems. They are in a way "live cases" because they are always up-to-date. When working on this kind of project students usually form teams which "compete" collecting additional information and solving problems described in case-studies. Solutions may be presented to the whole class and the supervising professor or alternatively to a group of external experts who will evaluate appropriateness and feasibility of the proposals. The ideal situation would be when the results of the project were evaluated by managers from the described companies. This however is often difficult to organise. Company management is usually keen to cooperate when the project is launched. They give con-

sent to internal data collection and show up at the first presentations but later it is difficult to get them more engaged. In such a case it is good to send the results of students' work to the company so that you can tell students at the beginning of the project about that. Such information usually motivates students for better work.

This kind of projects has the advantage over "traditional" case-solving exercises because they are more attractive and credible for students. They require however bigger involvement of professors if only because of the need to constantly update the cases.

The author of this chapter used to be engaged in this kind of projects for almost a decade. Together with his fellow professor they were running a course called Methods of Strategic Analysis which was based on two live cases: one of medium-sized brewery and the Polish brewing industry and the other one on a big tale producer and the tale production industry in Poland. In both cases the task was the same: to assess the attractiveness of the industry and company's competitive position in it. The course included a voluntary visit to a company where students could learn about and observe a production process, find out more about company's products and talk to managers. Such a visit helped students understand the company better and gave them a chance to ask questions about the things that could not be described in the case. For majority of the students it was a first visit to a production plant ever and although it was not obligatory all the students used this opportunity with hardly any exceptions. It has to be added that both companies were located a few dozen kilometres from the university which meant taking a day off from other lectures.

This project required a lot of effort both from the students and the supervising professors but this effort was worthwhile since the project provided a good learning experience for the students.

Virtual business simulations are various kinds of virtual games in which students/groups of students play a role of managers and take business decisions on virtual markets just like in real life. The examples of such simulations may be StratSimManagement (www.interpretive.com/rd6/index.php?pg=ssc4& accessed on April 23, 2014) where students' groups compete in domestic automobile industry or Web Marketplace Business Simulations (www.marketplace-simulation.com/promo/promo112/index.php accessed on April 23, 2014) with lots of versions related to various management functions and firm strategies like e.g. supply chain management, e-commerce or venture strategy. A common feature of all virtual simulations is that students not only solve complex problems and take business decisions like in case studies but also they have to deal with the consequences of their decisions in the next steps of the game.

Virtual simulations are very good experiential learning methods because students get involved in them a lot. When preparing for a decision to be taken they make long internal team discussions, sometimes even quarrel, try to anticipate decisions of other competing teams, do a lot of calculations and generally make every effort to win the game using all the knowledge they acquired during other business courses they have

already had. In some business school curricula a virtual business simulation is mandatory for all the students.

Short study programmes/visits abroad are very intensive programmes based on short students' foreign exchanges during which students have an opportunity to visit foreign companies and talk to their managers, participate in short lectures and business presentations delivered at a host university, take part in networking events with local students as well as in local cultural events and sometimes even spend a few days at host families to immense in local language and culture.

Organisation of such events requires cooperation with foreign partner (foreign educational institution) who helps to organise all events on the spot. Such short programmes are very attractive for students and give them some experience of foreign business environment including foreign culture. A learning experience is bigger if the programme is organised in a more distant and less known country which may be a good future business destination. A big disadvantage of this kind of study programmes are high travel and living costs that you have to cover.

The example of such short visits abroad may be International Intensive Programmes organised by the University of Latvia.

4.2. Business Educational Projects

Business projects are the form of company-based projects requiring actual involvement of a company. In this type of projects students act as if they were company employees or even managers solving real time company problems. They usually start with a company visit or at least with a company and a problem presentation done by company managers in the classroom. Later students' work is supervised by professors but the results of the work are presented in front of company representatives. Apart from presentations of the results such projects are usually concluded with reports that are delivered to participating companies.

Participation in this kind of projects gives students the feeling that they are doing something – not just another boring classroom exercise requiring lots of work which, in a way, is useless in their opinion. This experience give students a chance to get feedback from real business people, not only from university professors who are most often believed to be devoted to economic theories which are far from practice. For university professors it is a chance to show their students how economic theories relate to practice and how useful can some business tools and methods described in students' handbooks be.

Business projects can be done with a single company when multiple student teams solve the same task trying to achieve the best results or with several companies when each student team is working with a different company. The first option creates competition among the teams while the second one gives students from different teams some

possibility for cooperation – teams may learn from one another how to perform the same task yet for various companies.

Business projects are somewhat similar to the above described case-based projects. The basic difference is that students have to gather all information by themselves while in case-based projects lots of information is already provided in a case description and students only supplement this information and draw conclusions.

Business projects may be divided into home country based projects and international projects. Home country based projects may be done for both home or international companies but they always deal with doing business at home. On the contrary international projects deal with doing international business.

International projects

The examples of international projects are: X-culture project, Global Enterprise Experience and Export/import projects.

X-culture project (Taras et al 2013; www.x-culture.org accessed on April 23, 2014) is a project during which international business students from universities around the world work together in virtual teams on a business proposal for a multinational company of the team's choice or on real-life business challenges provided by X-Culture Corporate Partners for about two months and write a business report together. The requirement is that there are seven students in each team and each team member comes from a different country. Communication among the students is conducted with the help of various online tools, such as email, Skype, Google+, Facebook, Dropbox, and Doodle. All the communication is done in English. Students work is very structured. They have clear instructions what to do and have several deadlines to meet submitting various types of reports on the work in progress.

The X-Culture project was started in 2010 by prof. Taras from University of North Carolina at Greensboro as a cooperation of 7 universities and was repeated every semester since then. By 2014, almost 3,000 students from 75 universities in 40 countries from different parts of the world took part in the project. Invitations to participate in the project are sent mainly by AIB mailing list. Participation in the project is free and the main requirement is that the project matches the course taught because it has to constitute a part of an international business course. Before the project begins students and professors have to complete an online training and take a test to make sure that they are well prepared to the project. If the project is successfully completed the students and professors receive X-Culture certificates.

Although originally students participating in the project could only work on the problems developed by them and when preparing the reports for a company of their choice had little chance its managers read the report, the situation is different at present. So far the X-Culture project has attracted attention of several business partners who suggest the topics for research and read the reports with great interest.

Global Enterprise Experience (www.geebiz.org accessed on April 23, 2014, Taras 2014) is in some ways similar to X-culture project. It is also based on virtual work of students in international teams but the cooperation is shorter as it lasts 3 weeks only. The project is not a part of any course however any professor may make participation in Global Enterprise Experience a part of his/her course assessment. Any single student from any part of the world can enrol to the project at no costs. Enrolment is done via the project website. The project has a special platform – Basecamp – which students can use for communication. They are not limited to it however and may choose any other on-line forms of communication as well as mobile phones.

The project concentrates on developing global management skills. There are eight students in each team and each team member comes from a different country. Unlike in X-culture project an enrolling student may already have a partner to work with but it is not a requirement. A New Zealand student is assigned to every team and he/she always takes a lead at first but may pass it to another team member during the work. The task for each team is very general. It is a requirement to develop a six-page business idea on a given topic. In 2014 the topic concerned a proposal for *a profitable product or service that addressed the needs of children and/or youth*.

Victoria University of Wellington in New Zealand which is the home of the project started it in 2008 together with three other universities: University of Otago in New Zealand, Universidad EAFIT in Colombia and Universidad Pontificia Bolivariana also in Colombia. The project is done every spring. By 2014 edition 5,500 students from 420 universities in 82 countries have already participated in the project. Global Enterprise Experience is also referred to as contents because there are several prizes student teams may win every year. They are awarded by a special New Zealand jury. To be eligible for prizes or awards students have to submit additionally a one page testimony on their insights and experiences from the project.

Export/import projects are the oldest of the discussed here three types of international experiential learning projects. They had been started in October 2007 by the consortium of three European educational institutions: International School of Management from Dortmund in Germany, Université Paris 13 from Paris in France and Warsaw School of Economics from Warsaw in Poland and three Canadian institutions: North Island College from Courtenay in British Columbia, St. Francis Xavier University from Antigonish in Nova Scotia and Université du Québec à Montréal from Montreal in Quebec. The consortium developed a project called the Interparse Project (International Trade Education in Partnership with Small and Medium Sized Enterprises) which was funded under the Canada – European Union Programme for Cooperation in Higher Education, Training and Youth.

The project's objective was to produce business graduates who can plan and implement international undertakings. Under the project's framework international student teams investigated and reported on export opportunities for real businesses from European Union and from Canada. These student teams typically included mobile stu-

dents on exchange from partner institutions in other countries, and the projects on which the teams worked served as major assignments in international business courses. The partner institutions exchanged 65 students who working with hundreds of students in host universities investigated export opportunities for 31 European and Canadian businesses by the time funding expired in July 2011. (You can learn more about the Interparse project and how to run similar projects from the book: M. Jarosiński, N. Robinson, Eds. (2012). *Managing Course-Based Export/Import Projects: A Handbook for Teachers of International Business,* Warsaw-Courtenay: Warsaw School of Economics Press).

When Interparse project was over two partners (North Island College – NIC and Warsaw School of Economics – SGH) decided to have a bilateral cooperation in running course-based export/import projects. Due to the lack of money for funding further exchanges Nick Robinson (from NIC) and the author of this chapter (from SGH) decided to redesign the project. From that time on the cooperation continuous in the form of virtual work like in the case of Global Enterprise Experience and X-culture project but the teams consist only of students from the two above mentioned institutions meaning that in each team there are two or three students from SGH and two or three students from NIC. The teams typically have 4–5 students. Each student in a team has strictly divided responsibilities for which students apply beforehand sending their background and preferences surveys to the supervising professors.

Export/import projects constitute a substantial part of two business courses taught at cooperating institutions however the whole work on the project lasts only for about seven weeks which is the only period when Canadian winter and Polish spring semester overlap. The task of each team is to investigate market opportunities for a real American IT company planning expansion all over the world. Each team performs a strategic analysis of a different country market and proposes an entry strategy. In the years 2013 and 2014 altogether 86 students investigated 9 European and 11 non-European markets working in ten virtual teams each year.

The whole project starts with a videoconference between the two schools for the students to meet and introduce, then an online meeting with the company follows. Company managers present the company its software, development plans and what they expect from students. Then student teams work on their analyses collecting market data and calling potential customers to learn about their preferences. The project ends with 10-minute online PowerPoint presentations by each team delivered for the company that is usually attended by the company CEO, Marketing Director, Vice President for Business Development and several other managers. Later the company receives all the team reports on target country market analysis including a long list of potential customers with their contact details.

Similarly to the other international projects students working on export/import projects have several deadlines to meet. During their work students within each virtual

team use various forms of online communication and support: Facebook groups, Google Docs, traditional email, Skype and other. Online meeting with the company are done with the help of GoToMeeting software.

5. Conclusion

The basic role of education has always been preparation of young people for future, adult life. In the case of higher business education it is getting students ready for business professional life which nowadays is very demanding. To better prepare their graduates for confrontation with the real business world business schools reach for new teaching and learning methods. Experiential learning methods are ones of them.

The experiential learning methods have their advantages and disadvantages. The major advantage of all these methods is the amount of knowledge a student can assimilate in comparison to traditional teaching methods. Another major advantage is the applicability of knowledge acquired through hands-on business experience. This knowledge can be directly used in future professional life. The experiential learning is also more attractive than traditional way of studying. This fact itself causes that students get more engaged in what they do and this way learn more.

The disadvantage is the work-load both for students and a professor especially in the case of business projects. The realisation of tasks in business projects is time consuming. If students work in virtual teams the communication process takes time, especially if team members are in totally different time zones. For the professor preparation of a business project is usually a big effort. Then the coordination of the project is time consuming. These difficulties encountered by students and their professors are counterbalanced by the gains both parties can eventually have. Therefore the author of this chapter, having lots of hands-on experience with experiential learning education, encourages all the readers to include more experiential learning exercises and projects into their courses.

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Summary

Business environment has always been changing but nowadays its changes have taken an unprecedented pace. Business environment has become more global, more technologically advanced and more turbulent than ever. As a result, businesses need their managers to be better prepared not only for today but also for the future. When recruiting business schools graduates firms expect them to have lots of skills like eg. technological skills, project management skills, good communication skills or intercultural skills. Thus business schools to be competitive have to prepare their students for the future employers' needs. To do that they are changing the way they educate students. What one can observe in recent years is the shift from professor/instructor concentrated education to student and task oriented teaching process. Business schools all over the world are adopting experiential learning methods which have become an important tool in contemporary business education. The chapter reviews different forms of experiential learning emphasizing those which have been successfully tested by the author like case-based and company-based projects as well as export/import projects to name just a few.

CHAPTER 6

Innovative approaches to knowledge transfer, experiential learning and SME application within business education

Sally EAVES*

1. Introduction and Aims

The levels, breath and currency of graduate skills and competencies, continual curricula progression and provision for effective life-long learning are foregrounded as a core focus in business education, within a European context. This is essential to achieve the competitive growth and digital literacy aims of the Europe 2020 Strategy, alongside other flagship initiatives including Innovation Union, the Agenda for New Skills for New Jobs, the IPR Strategy 'A Single Market for Intellectual Property Rights', a Digital Agenda for Europe and the Creative Europe programme (OECD 2010; European Commission 2014a, 2014b). Business education must also address specific market needs such as fulfilling the 900,000 ICT job vacancies forecast for Europe by 2015 (European Commission 2014b). This is impacted by uneven digital skill levels, a need for enhanced training support for educators and demands for an integrative ICT investment infrastructure (European Commission 2013a)

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A "distance between education theory and business practice" (ADAM 2011) presents an additional concern. Competences such as entrepreneurial learning may be constrained by the predominance of analytical, scientific and cognitive teaching perspectives (Adler 2006), with a lack of attention to conative and emotional dimensions (Shepherd 2004) and innovative pedagogy (Sharples et al. 2013). This is compounded by a gap between management research and praxis (Empson 2013). There is increasing recognition of the need for managers to broaden horizons and extend forms of knowing in order to be able to *complexity* and address messy problems (Meisiek, Irgens & Barry 2008). It requires the attainment of "novel ways of understanding and the ability to think with different perspectives" (European Commission 2013b), and similarly, for new graduates to emerge with creative, adaptable mindsets. This reflects a position that moves away from a viewpoint of education as banking (Freire 1972) or the transmitting of deposits of knowledge; to one that recognises social process (Dewey 1963) and cultural contexts (Bruner 1996), integrating art and aesthetics, craft, narrative and science.

This chapter advances a pluralist worldview (Ghoshal 2005) to begin to address these challenges. Multiple forms of individual and social sense making are acknowledged to enable rich and balanced insight across conceptual, sensory and aesthetic elements, with cultural pluralism respected (Goodman 1978). This lens remains underdeveloped in business education, notably in management (Meisiek, Irgens & Barry 2008) and entrepreneurial learning disciplines (Higgins & Elliot 2011). A multi-stakeholder approach is promoted which employs interactive engagement (Fee 2012), provision for different skill orientations (Wakefield & Sissom 2013), support of reflexivity (Higgins 2013) and scaffolding for the informed, professional judgment of educators (Alexander 2008). It is underpinned by a pragmatic, holistic approach to practice (Simpson 2009), with business education situated in the practical, the practitioner-based, the active and the everyday (Dewey 1963; Higgins & Elliot 2011).

2. Learning Approaches: Case Studies and into the Field

The case study is an established means to complement and extend the traditional lecture, affording strengths in respect to familiarity with the narrative way of knowing, relevancy, applicability, faculty engagement, active student involvement and exposure to complex business realities (Harvard Business School 2014a). Particular interest in advancing the method is identified within Central and East European Member States, as encapsulated by initiatives under the Leonardo (2010) project. Potential benefits include the development of management skills such as exchanging perspectives, debating, critical thinking and problem-solving. This can build confidence and competency in analysing multi-layered issues and the navigation of ambiguity; alongside experience in exercising judgement, leading to more considered, holistic decision-making (Rees & Porter 2002). Conversely, Shugan (2006) raises case concerns including the

possibility of topic restriction, a determinate focus and lack of attention to integrating newly published and/or less obvious literature findings.

The innovative learning approaches introduced serve to further the case study format whilst negating the loss of knowledge risks Shugan (2006) discusses. The standpoint advanced is action-oriented, current and contextually dynamic, bridging the social, creative *and* the technical; the cognitive *and* the experiential. It is underpinned by the assertion that business education and perspectives on learning need to bridge conceptualisation with experience. This resonates with elements of the FIELD method - *Field Immersion Experiences for Leadership Development* (Harvard Business School 2014b) which provides a means for students to translate ideas into praxis, synthesising study, practice and reflection and enabling inspired leadership. It is facilitated by active dialogue and real-world direct experience in a variety of cultural settings, building situational awareness and contextual humility.

3. Contextual Framing and Methodology

The creative industries are recognised as core stimuli for social, cultural, political, economic and scientific innovation and development (Springer 2014). Intersecting arts, heritage, media, design, economics and technology, the sector is subject to relative growth, enabling the creativity and capacity to achieve shared value that is critical to continual development of the knowledge economy (Arts Council England 2013). Burgeoning interest in social innovation and social entrepreneurship, alongside the growing contribution of SME enterprise (European Commission 2013c, 2013d) interacts with these industries, transversing economic, social, environmental and cultural value (Pembroke 2013). Conversely, business and management skills have been found deficient in the sector, with a need to improve investment readiness, provide intellectual property support, facilitate access to finance, enhance the entrepreneurial skills of creative professionals and build new engagement channels, particularly with universities (Eaves 2014a).

The Quadruple Helix Model of Innovation (Carayannis & Campbell 2009) frames this discussion, emphasising non-linear, user-driven, systemic and open system enablers, creative culture, and the critical intersection between university/knowledge institutions, government, business and increasingly, citizens and communities (Eaves 2014b). Core considerations include means to engage, optimise and promote interaction or alliances alongside the identification of best practice, specific training needs and learning capabilities. To begin to address these issues, the chapter presents conceptual development underpinned by expansive, multidisciplinary literature review and exploratory insights from longitudinal primary studies in the creator sector. The continuing research adopts a reflexive, pragmatic philosophy (Dewey 1957), connects insider/outsider perspectives and integrates digital and traditional ethnography, utilising mixed methods. It foregrounds citizen and community-driven innovation and hy-

brid creative enterprise, notably hackspaces, alongside cross-helix engagement activities to elucidate capabilities, challenges and co-opportunity (Eaves 2014a, 2014b).

Emergent Business Education Opportunities

It is argued that multi-layered, multi-stakeholder benefits may be attained through creative sector collaboration, serving to advance and enrich knowledge transfer, experiential learning and SME application. Particular opportunities are observed in the rise of hackspaces, makerspaces, Fab Labs, repair cafes and a range of versatile, dynamic, social and highly active working spaces which enable access to DIY participation to create, make and share (Overgaard 2014; Miodownik 2014). Hands-on practical knowledge through experimentation, rapid iterative prototyping and immediate feedback may be gained in varied but potentially intersecting disciplines, legitimising a playground of arts, crafts, electronics, computer science, media, robotics, woodwork, software, hardware and digital fabrication alongside developing areas within the life sciences, biology and renewable energy (Eaves 2014a).

Exemplar enterprises present nuanced resources, capabilities, experience, specialisation, heritage, identity and ideology (Maxigas 2012; Eaves 2014b) but share a collaborative open knowledge ethos towards peer production. A confluence of digital-physical place across the interlinking levels of individuals, teams, physical locale and global digital network fosters a responsive, self-organising, hybrid and networked organisational form (Eaves 2014a). It enables **accessibility to infrastructure, tools, techniques and different ways of knowing; an assemblage of diverse and peer-led skills, disciplines, experience, cultures and knowledge forms, and the capability to attune to local consumption and production system needs; mobilising social and human capital and sociomaterial outcomes (Sharples et al. 2013; Eaves 2014b).** This can stimulate co-opportunity and cross-media literacy skills, creating a dynamic lifecycle of innovation (Grant 2010) and repair (Smith 2014).

Stifling passivity and promoting diversity, do-ocracy and responsibility, these developments are consistent with a networked society and growing culture of action catalysed by citizens/communities as boundary-crossing knowledge systems (Toivonen 2013). This impacts the structuring of business and workplace changes, alongside learning, training and development requirements. The hackspace has been depicted as an “alternative educational institution” which enables learning “outside the confines” of work, school or university (Newitz 2009). In this chapter and continuing research (Eaves 2014a, 2014b), it is positioned that similar enterprises should be engaged alongside the university, associated knowledge institutions and cross-helix partners. Three specific engagement channels are now explored to elucidate business education opportunities, challenges and implications.

4. Mentorship Networks

Mentorship can support mutuality, trust, connectedness, inspiration and active, expansive engagement between stakeholders, especially when underpinned by a non-dualistic, blended, multidisciplined approach which foregrounds a consistent equality of exchange across all stages of the relationship (Seldin 2011). Particular opportunities are identified in networks that engage students and gatekeepers in the university, alongside representatives from local creative spaces and the business community, notably SME entrepreneurs, social innovators and potential angel investors. The Kw Maker Lab (2014) in Bristol, UK is an exemplar case that embodies an intersectional, cross-helix mentoring approach from its inception.

A mentor network is considered germane for integration within a business education programme, acting as a responsive community of practice (Rigg & O'Dwyer 2012) that scaffolds reciprocal mentoring. Students can acquire expert, cross-disciplinary feedback on ideas from an embryotic stage and enhance competency in developing generative responses to complex, unfamiliar events, whilst building self-identity. University courses can offer access to highly valued experience in the creative industries (Hunter 2014) and potentially agree case study development and/or research collaborations, for example to explore dynamic citizen and community-centric innovation alongside emergent governance norms, responding to calls for new insight (Smith et al. 2013). Partner creative enterprises may be supported in surfacing means to fund and scale-up local and individualised solutions which may also aid the growth of incubated companies (Eaves 2014a).

5. Re-engineering Space

Employing a *maker culture* (Sharples et al. 2013) in universities encourages optimal use of space and any underused capacity, including within laboratory areas or libraries, alongside re-use of redundant or spare equipment and artefacts. It affords a legitimised, safe, fulfilling place to cultivate self-organised, social, constructive and creative design thinking and problem-solving, experiment with varied materials, skills and interests, and learn by mistakes, without significant financial investment (Santo 2013; Eaves 2014a). This necessitates and encourages cooperation and collaboration across disciplines and functional areas, promoting intersection across sciences and the arts. The approach can extend to museums, community centres and public libraries such as that observed at FabLab Devon (2014) in Exeter, UK with potential for life-long, cross-generational learning (Sharples et al. 2013). These catalysing innovation hubs can also benefit sustainability by reassembling and refabricating discarded materials into bespoke designs and inventions (Overgaard 2014).

Opportunities exist to establish places of action with maker-cultural activities ranging from repair cafes, to lectures, specific skills sessions and ethnographic workshops (Eaves 2014a). Indeed, the process of building up a project surfaces novel, real world

problem-solving scenarios that can foster interpersonal skills, leadership abilities, unscripted learning and hands-on practical experience. Recent pedagogical innovations such as the informal, mobile and creative space *SciBox* (Harvard Magazine 2014) supports experiential learning and development of complex, open-ended projects. It enables a flipped classroom approach (Berrett 2012), moving away from prescriptive activities and outcomes to more emergent, experimental activity with students engaged individually and collectively, through the sharing of project roles, responsibilities and a responsive decision-making dialogue.

6. Sponsorship Activities

Universities may engage in the sponsorship of specific developments such as a FabLab or local hackspace, or linked events such as Maker Fairs during which participant projects, tools and techniques are showcased and advice shared. This occurs within clear contexts of use and informal, yet well configured participation structures and standards (Santo 2013). University focussed hackathons continue to grow in adoption and allow a challenge to be set, with contributors competing to design the optimum solution, prototype or product in a short time period (Flint 2014). This provides opportunities for active student leadership and access to open, diverse and intersectional experimentation (Eaves 2014a). Cross-helix collaboration and innovation is supported by promoting wider engagement on solution generation whilst maximising limited resources (Flint 2014). Relationships can also be strengthened by partnering with schools to enhance potential future students' *a priori* meta-skills. This is exemplified by the UK national Code Club (2014) programme alongside individual school and community initiatives (Eaves 2014a), including expanded learning time across various afterschool and summer club approaches (Levine & Santo 2013).

7. Challenges and Recommendations

To optimise these emerging possibilities within business education, any deficiency in faculty expertise, staffing and/or resources or conflicting priorities should firstly be addressed. With respect to finance, it may be argued that the reuse of university equipment and redundant space will lead to enhanced exploitation of resources *already spent*. Optimisation will necessitate open engagement on all levels, alongside a panoptic lens in relation to integrating ways of knowing and learning styles. The incorporation of project-based course components; positioned to encourage integrative working across scientific and artistic disciplines may be beneficial. It is considered critical for universities to outreach to the growing creative sector and establish new professional links to build reciprocal partnerships. Intermediaries such as volunteer community researchers (Cummings, 2014) can offer a utile bridging role, affording a shared language, contextual sensitivity and cross-sectoral credibility. Longitudinal attention should be directed at observing the impact of these approaches to provide more sys-

tematic understanding of how, why and when pedagogical innovations work, developing an accumulative evidence base and disseminating insight into innovative teaching method efficacy, applications and roles.

8. Benefits and Conclusions

This chapter presents a responsive, relevant and reflective lens on pedagogy in business education which facilitates a more personal, learner-centric ethos that responds to the call of the European Commission (2013b) and can complement both the case study and FIELD methods. It pragmatically synthesises scholarship with creativity and practical application, whilst demonstrating the capacities, challenges and possibilities of multi-stakeholder approaches. Collaboration with creative industries offers novel exemplars of emergent praxis that can *move beyond* traditional cases of well recognised, national companies to reflect the dynamic growth of social enterprise, social innovation and SME catalysts as these continue to gain prominence. It also fosters opportunities for discipline and cultural fusions; experimentation, feedback and iterative prototyping; development of situational awareness and humility; and exposure to different types of knowledge *in action*. Mentoring networks, space re-engineering and sponsorship activities provide indicative channels of engagement.

These affordances combine to build an integrative, eclectic and reflexive opportunity for deep learning to scaffold the development of adaptive, entrepreneurial and socially skilled managers and leaders with cognitive, experiential and multiliteracy competences, underpinned by a cohabitative appreciation of different ways of knowing and their potential application. This can contribute to bridging the identified gaps between theory and praxis, enabling progressively complex knowledge construction, breadth of awareness and depth of evaluative skills to address emergent, intricate, messy and indeterminate problems. Similar active reflection is advocated for the continual refreshment of curricula, striving for currency in academia, research and engagement to create a robust, productive and reciprocal teaching-research-practice link. This can surface evolving exemplars of best practice from multiple lenses, support methodological progression in both pedagogy and research, and advance the call for greater diffusion of innovative content and ideas (Arts Council England 2013).

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Summary

This chapter serves as a point of dialogic departure for the reflexive progression and longitudinal study of pedagogical innovation in business education. It foregrounds emergent social contexts and highly participative structures for learning and development, notably hybrid organisations such as hackspaces, which embody a collaborative, open, experimental, networked and diverse, yet intersectional, maker culture. Proactive university engagement with the vibrant creative sector is promoted to build breadth and depth of cognitive, social, technical, analytical, conative and emotional skills, varied experiences and enriched capacities for knowing; underpinned by exposure to new ways of learning *how* to learn, through processes of doing (Dewey 1963). Exemplar conduits of engagement include the establishment of cross-helix mentoring networks, a re-engineering of campus space and sponsorship of community-linked creative enterprise, supported by the incorporation of project orientated course components which encourage interdisciplinary working. It is argued that this inquiry-based emphasis can foster the inclusion of a "maker-driven learning" (Santo 2013) ethos within an evolving, versatile and multiliterate business education programme.

CHAPTER 7

Project- and service oriented thinking in engineering management education

Sławomir OSTROWSKI*

1. Introduction

The author currently studies the 3rd year of a PhD programme and has a relatively small teaching experience at Gdańsk University of Technology, however, he has several years' experience in the field of Project Management. It has not been long since he was on the other side that is when he was a student of a one-cycle master's course for engineers. At present he monitors the job market and how people function during their studies as well as after graduation. This chapter has been written because he would like to share his opinions and observations.

The author will present important aspects related to teaching classes in an accessible way, and, importantly, the students should immediately apply the gained knowledge to practical situations. The knowledge of project management is currently limited among the students of engineering studies. This knowledge is present in numerous fields as well as in everyday life. In order to be properly prepared for professional work and adult life the knowledge of project management should be acquired at the earliest possible stage of study.

The correctness of the above statement is confirmed by the article titled „The latest trends in the job market or which studies to choose" [Polish title: „*Najnowsze trendy na rynku pracy, czyli na jakie iść studia*"] placed on the internet website www.edulandia.pl, where the opinions of HR managers can be found, in which they

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emphasize the significance of the knowledge of project management of students and university graduates. Project approach is taught during studies in student organizations and student research groups. It can be observed in many instances that when leaving university the graduates of renowned Polish schools are not aware what project approach is and how it can be applied. The author will present in this chapter how this knowledge can be quickly taught to the students. It is a key element in the education of the young generation that the knowledge gained at university is applied to practical situations, both in private and professional life. The author describes in this chapter the examples of how to teach this knowledge in a quick and practical way, the knowledge which will certainly influence the students' next steps and decisions, and in many instances will change their life attitude.

2. Study years – the crucial stage of defining predispositions

It has been observed that some of the candidates enrolled in a university are not convinced that they have chosen the right course of study, or even the right faculty at which they want to study. It has been the author's observation that this situation results from the changes in the job market, which reacts very rapidly to the growing number of graduates "produced" by the Polish universities. At present the university candidates choose universal faculties and courses in order to be able to adapt to another branch if necessary. There is a noticeable trend that the students who want to develop deeper domain specific knowledge – are actually lacking. It results, as the author has already pointed out, from the conditions in the job market. Project oriented attitude should be applied when developing the study programmes. The author believes that this approach might be helpful with drawing study curricula, which would create the profile of the future graduates. In order to attract the customer – that is the student, universities race to perfect the study programmes and the offer addressed to the students. However, they tend to forget the expectations of the customers. Project-oriented thinking seems to be missing here because it would be a good idea to find out what the future students are interested in and obtain information how to prepare the offer for both those who do not have a clearly defined idea of their future work as well as for those who already have a vision of their dream job, or the job which they want to do after graduation. The author suggests here to use the concept of designing services, which will help to obtain information from the students who choose a specific course. It should be found out what their expectations concerning the studies are and what knowledge they would like to gain. It can be observed that the knowledge offered in a practical way, that is in the form of running projects or team working during classes is better received by students. It is quite likely that some people will not respond or they will look forward to the easiest way to graduate from university. On the other hand, there is a considerable number of ambitious people who want to take the advantage of the possibilities offered by the university and university teachers. Universities are capable of turning the stu-

dent into a perfect employee or a specialist in a given field. Most importantly, the student who had specific expectations towards the university will be better than all the other students who were interested only in formal graduation from university. Hence, numerous reports are prepared including suggestions about graduate programmes worth choosing. A report from the survey carried out by Sedlak & Sedlak "Which studies to choose to have a well-paid job? [Polish title: *„Jakie studia wybrać, aby dobrze zarabiać"*] is one of the reports of this type, and its conclusion is that nowadays economic studies are the best choice. This type of the reports are very popular in our country. Next on of theme will be presented under this paragraph. Choosing studies is one thing, whereas starting and completing them is another.

Table 1. Study years – the crucial stage of defining predispositions

Place	TOP15 - industries	Avarage dificit	+3 years	+3-5 years	+5 years	+5-10 years	+10 years
1	Computer science and programming	-30%	-10%	-20%	-29%	-37%	-40%
2	Education, nursing and teaching	-29%	-11%	-19%	-29%	-35%	-38%
3	Automotive and modern technology	-27%	-9%	-18%	-26%	-32%	-35%
4	Energetics	-26%	-10%	-17%	-25%	-30%	-34%
5	Medicine	-25%	-9%	-16%	-25%	-30%	-32%
6	Medical services	-25%	-8%	-16%	-24%	-30%	-32%
7	Hairdressing, nursing	-24%	-8%	-16%	-23%	-29%	-31%
8	Logistics	-24%	-9%	-14%	-22%	-28%	-30%
9	Mathematics	-23%	-9%	-14%	-21%	-26%	-29%
10	Nursing	-19%	-7%	-11%	-17%	-22%	-25%
11	Engineer science	-19%	-7%	-11%	-16%	-21%	-23%
12	Law	-15%	-5%	-8%	-13%	-17%	-19%
13	Nutrition	-14%	-4%	-7%	-11%	-16%	-17%
14	Finance, banking, insurance	-13%	-3%	-7%	-11%	-15%	-16%
15	Economics	-13%	-3%	-6%	-10%	-14%	-16%

3. First year of study

The beginning of studies is a breakthrough phase for all, conditions change, and so does the environment and lifestyle. The threshold of adult life is crossed, so it is important to pay more attention to the young people and show them the possibilities linked to studying. It is a crucial thing to present the study curriculum, discuss the university rules and present the opportunities of development, for instance through presenting the additional offer from students organizations and students research clubs. Activities of this type are carried out by universities in the first weeks of study. Unfortunately, it is not a good time when everything is new to the students and most of them feel lost and confused upon entering a new academic environment. There are additional difficulties in the first weeks of the first term of studies – they have an entirely different daily routine than they had before, for example, they live far away from family, in a dormitory, share a room with a stranger or rent a flat on their own. Project-oriented approach should be presented to the students in the first year, and how to apply it to practical

situations in order to live better and more easily during their study years. The Project Management department may serve as an example here – and teach planning. The students can be shown how to plan the day, the week or the month most effectively – what opportunities it brings, and the tools for time management, so that during their studies they could make the best use of the opportunities given by the university. As a student the author was a social activist in a non-profit organization. Owing to this experience he knows that there are people who use this type of approach. Unfortunately, such people are rare. Including project-oriented approach in the study curricula of the first terms would give an opportunity to present the possibilities and opportunities related to studying. It would be quite enough if some of the students would consider what they expect from the university and what they want to achieve thanks to studying a specific course. The initial phase of studying, that is the first year of study we are discussing here, gives the students an opportunity to change many things if they notice that they can do more than just study.

4. Student life as the preparatory stage for working

Studying consists not only in doing research work between exam sessions but also in entertainment. It is the time described by the majority of people as the best time of life of the young people. It is the time when quite a number of students leave home in order to start adult life. For some of them it is a breakthrough period when they learn not only at the university but they also learn life skills through living in a new city, in a new environment. The time of study is defined as the time of getting to know new people, making new friends for life, and in many instances, of meeting one's future spouse. Therefore, the student life connected with entertainment, play and other pleasures, which can be enjoyed by a student, is a part of studying. But let us imagine a student who comes to study from another city and plans to make a carrier based on university education. He (or she) does not concentrate on short-term issues but has plans of his (her) own and wants to carry them out. The students when starting their university education do not have a precise goal in life, a sector in which they would like to work, it is just the university education that is supposed to help them define the above, so studying itself will not be much helpful in that process. Coming back to the example of a student: he does not know for sure either what he should do, but he knows that the he wants to find a job related to the course of studies he has chosen. When making his best effort to learn he will acquire knowledge in the way it has been designed by the university. The question is whether the study curriculum has been designed in such a way so as to produce a good employee for the job market out of the student? And the answer seems to be "no". Therefore, another question comes up: what should be done to improve this process? It seems that the study curricula should be designed in such a way that they would be guidance to young people. They should be guided in such a way so that upon graduation they are certain what they want to do,

what job to do in the future. Next, what sector and in which position they should work. It is the author's belief that universities should take a closer look at the expectations that the university candidates have towards them and studying. The student is a customer of the university and it can help show him the way which he should follow to achieve success in his private life and the future professional life because it is exactly the purpose of university education to prepare for it.

5. Study as work

Studying should prepare the students for their professional life. Hence, mandatory on-the-job trainings for the students are included in the curriculum. The author observes that one-month on-the-job trainings are described by the students as an obligation which does not bring any positive results. As the results of the study of the students' „Preferences and opinions on internships, on-the-job trainings and the first job" [Polish title: *„Preferencje i opinie studentów o stażach, praktykach i pierwszej pracy"*] carried out by ConQuest in 2009 show, almost half of the respondents gave the answer that the on-the-job trainings in which they participated lasted from one to three months.

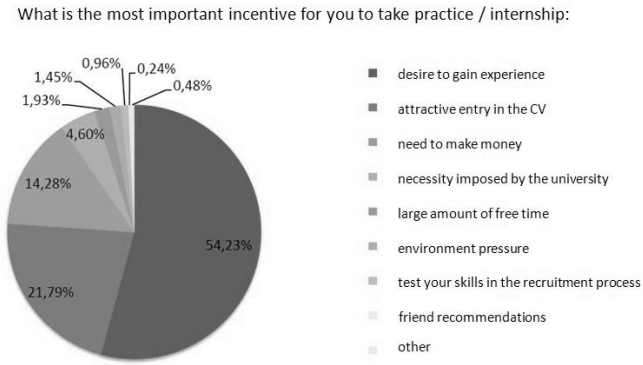

Fig. 1. A study titled „Preferences and opinions on internships, on-the-job trainings and the first job"[8]

However, also half of the respondents gave the answer that the on-the-job trainings in which they participated were not paid at all. The students perceive the on-the-job trainings as an obligation which must be fulfilled as quickly as possible to be quickly forgotten. The on-the-job trainings are frequently organized in the places which are related with the students' course of studies, however, the work they do there, substantially differs from the work for which they were prepared by the university. The author finds the blame of the university in not allowing the students to undergo the on-the-job training before choosing the subject matter of their master's thesis. Moreover, it rarely happens that the university supports the students in choosing the place of the on-the-

[8] http://www.conquest.pl/wp-content/uploads/2011/05/ConQuest-badanie-studentow.pdf

job training. In addition to that, the students not infrequently have to decide without the university's support which sector or which company their bachelor's engineering thesis or master's thesis should be based upon, and it is only later that the issue of mandatory on-the job training comes up. Writing a thesis should be linked with undergoing the on-the-job training, which obligation is imposed by the university. The on-the-job trainings are, indeed, a very useful part of university education, but they should be carried out in such a way so as to enable the students to gain professional experience. According to the university guidelines, the duration of the on-the-job training is one month, however, it is hardly noticed that it might be the beginning of the young person's professional career. As the results of the study carried by ConQuest show, gaining experience is the major motivation to take up the on-the-job training or an internship. Whereas the study carried out by Deloitte in 2010 revealed that 77% of the respondents indicated that the opportunity to learn and acquire new skills is the most important factor in selecting the on-the-job training. As a result of the student's involvement in the company's activities and its processes, which the student can improve, the training provides a wonderful opportunity to get employed by that company. While monitoring the job market, the author noticed that there are many companies which look for young, ambitious people who have fresh ideas. These companies will provide materials and information about the company in order to enable the students writing their thesis based on that company's example to help solve its problems or to improve the functioning of the enterprise. Additionally, the results of the survey carried out for the Office of the Marshall of the Pomeranian Voivodeship among the students of the final years of study at the universities of the Pomeranian Voivodeship show that nearly 53% of the respondents gave the answer that after graduation they intended to stay in the city where they studied, which means that obtaining a contact with the company related to writing a bachelor's or a master's engineering thesis may result in a long-term cooperation and employment. There is a noticeable number of projects financed with the support of the European Union, which are aimed to connect the worlds of business and science. The reason being the discrepant objectives of the two worlds. One cares for profits and competitive advantage while the other cares for discovering new innovative solutions, which are not always profitable. Unfortunately, some results of these projects are not as satisfactory as it could be expected. The author points out that many enterprises begin cooperation with specific faculties and they are interested in specific courses when looking for future employees. This is the key element in cooperation. This cooperation should start with drawing a list of topics the students could research under their theses. Additionally, these companies could offer the students a chance to actually implement their ideas and solutions during the training in the company. Making a practical use of their knowledge within the company for which they have created the solution would make a wonderful opportunity to test their academic knowledge against practice. And, importantly, the on-the-job-training would be fully

valuable and the future university graduate would gain a lot of useful knowledge and experience.

6. There is more to student life than studying

Considering the fact that after some time the students find out what the course of studies they actually chose and come to the conclusion that the course does not fully meet their expectations and have to make difficult decisions. Some decides to study another course, hoping that combining two fields of specialization will enable them to work in more ambitious sectors where broader knowledge is required. Some will study and get best results in order to get scholarships. Some will do interim jobs in shops, bars or restaurants. They take up such jobs to make their presence on the job market, become independent and make use of their free time they have after a week of classes. Unfortunately, it also happens that the classes they attend are of no interest to them. It is important that the subjects taught at the university by academic teachers were taught to young people in such a way so as to inspire them to work and act. They should show how to apply knowledge to practical situations in both professional and private life. Students organizations and student research clubs are of help here because they are a chance for the students who are bored with or discouraged by the courses they chose. Instead of doing interim jobs, for instance, of a shop assistant, they have an alternative and can do something else, join a student organization or a student research club, where they can pursue their passions and interests. In their free time after a day of classes they meet in groups of people, who like them, want to achieve something else than just complete the chosen university course. Acting in such organizations or research clubs allows gaining „experience" valued by employers in university graduates. According to the study titled „Employers on skills and qualifications sought after in university graduates" [*Polish title: „Pracodawcy o poszukiwanych kompetencjach i kwalifikacjach absolwentów uczelni"*], the major criterion set by the employers for the graduates in the recruitment process is "personal and communication skills", which are best shaped and developed within student research clubs and organizations.

6. Working in non-profit organizations and project-oriented attitude

The student who decided to join a student organization wants to use his free time to learn something new. There is quite a number of student organizations and research clubs at the university to choose from. We have got student self-government bodies and international organizations which deal with the integration of the academic community within a single university. Some of them operate on the international scale and deal with student exchange programs between universities all over the world. Certainly, apart from student organizations there is room for research clubs too. They are associations which bring together the people who are interested in specific issues.

Thanks to it the students can meet with a group of people who share their passions and hobbies, which can be entirely different from the chosen course of study. It can be observed that the students who become involved in the activities of an organization or a club, learn the project-oriented thinking in a practical way. While organizing various events, they build project teams, draw up time schedules of projects or events, define the budget, and, most importantly, carry out the project. Project-oriented approach used in such organizations is a wonderful opportunity to gain experience in organizing an event for 20, 30 or even 300 people. Most students meet with project-oriented approach and project-oriented thinking for the first time only when working in organizations of this type. Unfortunately, a large number of students are afraid to take up the duties related with the additional non-profit work at university. The author has observed that in the 2-cycle programme of study there is very little time when the student could start working in an organization. In the beginning of study the students are rather unwilling to take up such challenges because they concentrate their efforts on studying and are afraid that they might not cope with the amount of current learning. During his work in student organizations the author noticed that the people who discovered in themselves organizational potential tended to spend more time doing non-profit work and that was not infrequently at the cost of lower grades in particular subjects. At the same time the author observed that those people who worked in such organizations stood a better chance of finding a job than many students who graduated from university with very good grades. It can be concluded that working in student organizations should be obligatory for all students. It enables the students to meet people who have various passions and discover their own. While discovering our weakness we also discover what we are best at. Thanks to working in student organizations or student clubs we may find out what brings us pleasure and achieve self-fulfilment at the same time. It is not seldom that while finding self-fulfilment in working in such organizations, we can help others by giving our time, which for many is more precious than money.

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Summary

The author presented in this chapter his experiences and observations based on his teaching of students as well as his observations of the behaviour of his fellow students made during his university years and after graduation. He found out that universities should use project-oriented approach and design educational services to meet the expectations of the people who choose them. Paying attention to students' needs is another issue highlighted by the author. It is vital to present the opportunities brought by studying and being a university student, starting from the first year of study. This stage in the life of each young person is to mark the beginning of shaping his future professional career as well as the direction of his personal development. Professional career should be built upon knowledge acquired in the course of university education. University should support gaining professional experience by making links between the students and business environment. The final and, in the author's view, the most crucial element of the present approach to teaching of engineering management is activity based on project-oriented approach in students organizations and student research clubs. They have a larger educational value than a one-month on-the-job training and enable the students to gain professional experience while still at university. If universities recognize the significance of the above considerations and if the students treat the time of study as an important time in their life, which can be used to discover oneself and the direction in which they should move, then the world in which we shall live and work will be full of people pursuing their passions and doing interesting jobs giving them long-lasting satisfaction.

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CHAPTER 8

Changes in knowledge organisation and the role of Problem Based Learning

Verner LARSEN*

1. Introduction - Marketization and academization of knowledge

The way knowledge is organised in curricula of contemporary professional education has been highly affected by two trends, 'marketization and 'academization'. Not only have these trends influenced education in Europe in general over the last three decades, but their impact on professional education has been significant.

From the 1980s an increased number of educational researchers have focused on changes in the relation between society, education and knowledge. Great concern has been expressed about the consequences for the quality of knowledge produced in research when such knowledge productions were increasingly directed by external market demands leading to what has been termed 'academic capitalism'(Slaughter & Leslie 1999) (Jacobsen 2004).

Many researchers have considered the changing role of higher education and university as part of an overall modernization of the public sector with an increased turn towards neo-liberal ideology (Hjort 2002). In the wake of this ideology, movements such as New Public Management (NPM) have emerged and emphasized the market value of knowledge (Lyotard 1996)(Klaudi Klausen 2001).

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This has been a key issue in educational sociology and knowledge research during the above-mentioned period where researchers have tried to interpret any implications for knowledge production at various levels (Gibbons 1994)(Hjort 2004)

Within professional education marketization and academization have effected curriculum development, but in different ways depending on the kind of educational program. In some cases marketization has become the most dominant trend as a result of an increased orientation towards the external professional world, which in turn has affected the transformation of knowledge into curriculum towards greater applicability. In other cases academization has had most influence as a result of greater orientation to the intellectual fields and thus bringing more abstract and theoretical knowledge into focus (Ek a.o. 2013).

Especially regarding academization there are a number of sub elements which make this trend a complex issue with multiple aspects. Overall there is no doubt that late modernity with its increasingly complicated technologies brings theoretical knowledge in focus. Such change processes on a macro societal level obviously affect the educational system in general (Delanty 2004).

Another element in academization arises from educational policy in general and particularly in professional education. In the last two decades attention has been on "professionalizing" professional education. This has resulted in an increased focus on the characteristics of professional knowledge. In order for the professions to improve professionalism they need to gain a greater power and control over an area of knowledge, which in turn points toward more abstract and theoretical knowledge (Staugaard 2011 p. 168).

What seems to have had significant and direct effect on professional education in particular is the Bologna process initiated in 1999 (European Association f. QA I HE 2005). The main goals for this process are to make European educations more comparable by implementing some standard guidelines and common structures, such as for example a standard framework for describing knowledge skills and competences (Q-framework 2003).

In the early 2000, the Bologna process resulted in a restructuring of what in the Danish educational system was previously named 'Medium Higher Educations'. They were now renamed to Professional-Bachelor Degree programmes and given a new curriculum structure. It can be discussed to which extent these changes have contributed to academization itself. Some researchers see the Bologna process most of all as a further marketization of education (Stech 2012), but it can also be argued that the Bologna process has enhanced a more academic mind-set in Professional Education (Cools 2011)(Kälble 2013). Requirements of so-called "research relations" to universities have put emphasis on the scientific value of professional knowledge. Also the new qualification framework may have affected the conception of knowledge. It has set out standard categories and descriptions for knowledge, skills and competences and em-

phasizes both theoretical knowledge, the learning to learn ability and the mastering of specific skills (Q-framework 2003).

Having outlined these most general forces in academization, it is worth noticing that interests in strengthening academic skills for students becoming professionals differ a lot from one profession/professional education to another and come from various parts and positions that influence the educational field.

The relationship between marketization and academization is complex, In some ways they draw in opposite directions but they are not necessarily contradictory. In professional education marketization is likely to push the curriculum towards applicable knowledge and favor inter-disciplinarity, whereas academization is likely to push the curriculum towards a more theoretical knowledge mode, which tend to maintain a single disciplinary approach (Bigland 1973). However, as it happens simultaneously, the two trends may need to find ways to function together in the same curriculum as well as in actual pedagogical practice. As it will be shown in one of the cases, academization may also unfold through the *methods* by which the students are expected to work in an interdisciplinary constellation of subjects.

.. The research question which is going to be further addressed in this chapter is therefore: *How has conflicting trends such as marketization and academization affected the organisation of knowledge in Professional Education and how has Problem Based Learning (PBL) been employed in order to cope with this?*

2. Theory and methodology

2.1 Empirical design

The empirical research which forms the basis for this chapter was conducted over the period 2010-2013 as part of a Ph.D. project. Two case studies from two different educational programs were carried out. A Nursing Education (NE) formed the main case and a Constructing Architect Education (CAE) a secondary case. Both educational programs are at separate institutions located in Denmark. In researching the curriculum, several empirical studies at each institution were included:

- Documents such as directives, circulars and syllabuses from the 1960s until 2008 were examined with focus on changing knowledge discourses and changes in the organisation of disciplines
- Classroom observations of various pedagogical practices to study the enactment of the formal curriculum
- Interviews with key staff and students at the two institutions

2.2 Singulars, regions and regionalisation

To understand some fundamental changes in education through history I draw on Bernstein's concepts, *singulars, regions* and *regionalisation*.

Bernstein distinguishes between singulars and regions as different formations of knowledge. Bernstein's inspiration in this particular area comes mainly from Emile Durkheim, who examined how knowledge has developed since the first universities were established. The initial division of knowledge was between the profane and the sacred – between faith and reason. Basically it was a tension between Christianity and that of Greek thought which formed the fundamental dynamic of the development in universities (Bernstein 2000 p. 82-83).

From this point a dislocation of two knowledge areas appeared; that of Trivium, comprising Rhetoric, Grammar and Logic and that of Qvadrivium comprising Arithmetic, Astronomy, Geometry and Music. Those became distinct knowledge areas – a specialisation of two discourses – the kind of division that Bernstein has termed classifications. According to Bernstein the organisation of knowledge in the western world has followed this principle of distinction between inner and outer - between common sense knowledge and specialized knowledge. Through history discourses such as Physics, Chemistry Sociology and Psychology have emerged as strong classifications of knowledge. Bernstein characterizes such strong classifications as *singulars,* which indicates that they produced a discourse only about themselves. They had very few external references (ibid. p. 9).

Bernstein claims that this organisation of knowledge has undergone a change in the 20th century and especially during the last five decades. Today we have reached what he suggests to be a *regionalisation* of knowledge. A region is a certain recontextualization of singulars. In order to form a region, knowledge is picked from singulars to be merged and related otherwise. In a historical perspective, Medicine, Engineering and Information Science are examples of regions. As singulars are intrinsic to the production of knowledge in the intellectual fields, regions are "the interface" between the field of production and any field of practice. Thus regionalization is – holding all other things constant – a weakening of classification. In my view Bernstein's argument about regionalization is supported even more strongly by the development that has taken place in professional education from the 80s up to now, which I will return to later in the chapter.

Bernstein's concept of regionalization is in line with other educational researchers that have analysed the modern role and function of education in society. Barnett argues how higher education especially during the 80s has become a function *of* society rather than *in* society, as he puts it:

"Crudely speaking society is coming to determine the forms of knowing that it wishes for itself. It is no longer content to leave their definition to the academics; or even as we have noted to their production. Higher education, furthermore, is having to respond to the epistemological agenda put to it by the wider society" (Barnett 1994 p. 22-23).

References to Habermas' thinking and critical theory are prominent in Barnett's analysis, but he does not victimize the universities. Instead he points out their responsibility to engage in a new dialog with society about their role and function. "*Higher education for a rational society requires that higher education expands its own sense of rationality"* (ibid. p. 24).

2.3 Code theories

To examine more specific changes in knowledge organisation I applied the Legitimation Code Theory (LCT) by Maton which is a further development of some of Bernstein's works (Maton 2008).

In Bernstein's code theory *classification*, C, and *framing*, F, are key terms. Both are about power and control related to the process of transformation of knowledge from its primary field of production outside academia to inside its pedagogical context. C refers to how strong the boundaries are drawn and maintained between the curriculum disciplines. F refers to how strong control is exercised over the transmission of disciplinary content and the student's way of studying (Bernstein 2001 p. 74-83). To some extent classification and framing can vary independently where strengthening and weakening is indicated with + and - .

The legacy from Bernstein's code theory, C and F, is brought forward in Maton's Legitimation Code theory (LCT) which integrates and extends Bernstein's theories (Maton 2007). By means of the so-called "specialisation codes" one can consider curriculum as an organisation of knowledge practices with stronger or weaker Epistemic Relations (ER) or Social Relations (SR). Knowledge is always about *something* claimed by *someone*. When the two relations are outlined as continua - ER vertically and SR horizontally – four code modalities emerge: A 'knowledge code' (ER+/SR-), a 'knower code' (ER-/SR+), an 'elite code' (ER+/SR+) and a 'relativist code' (ER-/SR-). A curriculum exhibits a 'knowledge code' – strong epistemic relations and weak social relations – when knowledge is clearly divided in subjects/disciplines with focus on a specific content and methods, and less focused on the involvement of the students' own preferences, experiences and habits. A curriculum exhibits a strong 'knower code' when there is significant room for the student's own style, personality, experience and dispositions within a broader framework of content objectives, learning goals and assessment criteria (Maton 2007 p. 16 Fig. 5.3).

As we shall see later, a weakening of the boundaries between disciplines has taken place in both of the two curriculum cases, and also less detailed description of content and evaluation criteria could be located. In Bernstein's code theory this corresponds to a weakening of classification and framing (C-, -F-). With the 'specialisation codes' one can argue that a movement from a *knowledge code* towards a *knower code* had happened over the whole period.

2.4 Curriculum typology

To enhance the framework for discussing the different curriculum orientations and how the two trends of marketization and academization can be reconciled, I refer to research work by Sarakinioti (Sarakinioti, Tsatsaroni & Stamelos 2011). The authors suggest four types of curriculum modalities:

1. Singular (academic) C+, F+, I
2. Old professional (regions) C+,F+ P
3. Interdisciplinary (academic) C-,F+, I
4. New professional (generic) C-,F+, P

In addition to the codes C and F, the authors add a third coding, "P" and "I". Those are also inspired by Bernstein who refers to the educational orientations either towards the external market in terms of *projection* (P), or towards the academic intellectual fields in terms of *'introjection'* (I). All together the three dimensions form a curriculum code for each of the four types. The four distinctions need a brief explanation.

Although all four curriculum types could possibly be located in educational programmes around the world, it is obvious that going from 1) to 4) reflects some general changes over time, also indicated by "Old" and "New".

As can be seen from the various types, classification (C) is strong in 1 and 2 but weak in 3 and 4. As a logical consequence this leads from singulars to regions and thus to inter-disciplinarity, which obviously represents a weaker classification than singulars which have clearer divisions. However, in 3, the content selection is still driven by the academic field – indicated with "I" - and less by external needs from practice fields.

"New professional" (4) is interesting because it is characterised by a strong focus on market demands – indicated with "P" - and at the same time on developing generic skills such as for example problem solving skills, learning-to-learn ability etc. (Sarakinioti, Tsatsaroni & Stamelos 2011 p. 86). Such programs therefore often employ new forms of pedagogies such as Problem Based Learning and /or project work. Subsequently the boundaries between disciplines are typically blurred and learning outcomes are very often expressed as competences of professional action (Larsen 2014). For all four curriculum types, the transmission and acquisition of knowledge is relatively strongly planned and controlled by educators and teachers.

The four types are empirically determined, and so further combinations may occur as we shall see later in the presentation of the two cases. However, I will use the typology as a reference in the discussion.

3. Research results

3.1 A move towards further regionalization

Following these methodological considerations, I shall now specifically turn to my two empirical cases and present some key results from the analysis concerning the two main trends, regionalization and academization, and how these issues have been dealt with.

The empirical studies demonstrate that the Nursing Educational Programme (NE) strives at developing academic skills in nursing and care as part of their professional identity (Rasmussen 2004). Key agents in this educational context have seen the general changes as an opportunity to strengthen academic knowledge. However, The Constructing Architect Educational programme (CAE) does not seem to have such interest at all. It strives for other kinds of recognition such as a certain positive image in the building industry. As stated on their web site, a well-educated constructing architect is a person who brings everything and everybody safely together on the building site(*http://www.kf.dk/konstruktoeruddannelsen/*). Key agents in this educational context therefore attempt to downplay any academic impact. In short, NE has a strong *introjection* interest and a slightly weaker *projection* interest. CAE has a strong projection interest and no introjection interest at all. Currently, an academic field developing CAE's own scientific knowledge does not exist. This type of knowledge development takes place in the existing well-established intellectual fields of architecture and engineering from where it is transformed and recontextualized into knowledge suitable for CAE. In this process 'pure' knowledge is turned into applied knowledge (Bigland 1973).

As previously mentioned, the specific changes in knowledge organization and the structuring principles were examined by means of Bernstein's and Maton's analytical tools. The research result reveals significant changes in knowledge organization.

A gradual weakening of both boundaries between disciplines and framing of the pedagogical content (C-/F-) can be traced over the whole period from 1960 until recently. This change is evident for both of the two cases, CAE and NE, but most significantly in CAE. The data material shows that the content and assessment criteria for each discipline have become continuously less explicit in curriculum documents. Almost simultaneously descriptions of students' involvement and their own subjective resources have become increasingly more explicit in the descriptions of learning goals and assessment criteria. This is not surprising as learning discourses have generally become increasingly orientated towards the learning subject during the 80s and 90s, i. e. discourses of constructivist pedagogy, competence, "student directed learning", etc. (Hermann 2008)(Bjørgen 1991). When the specialization codes are applied as the analytical tool, a move from a knowledge code towards a knower code appears.

However, the picture is even more differentiated. The code changes of the disciplines must be considered along with decentralization of recontextualization. This means that decisions about disciplines and their content which were previously made at a top level in the educational system, the Ministry of Education, have gradually been pushed down to the institutional levels. However, an important point here is that disciplines do not just disappear as singulars, but the decisions about them are moved to lower recontextualization fields.

In the CAE case, a clear demarcation and description of disciplines can no longer be found in *formal* curriculum documents. Up to the late 1980s, disciplines where defined at the state/ministry level in directives. The main disciplines comprised: "Building design", "Statics", "Building Services" and "Planning and management". Today those disciplines are only made explicit in the student's timetable, and subsequently they still operate as such in the classrooms. The point is, however, that the disciplines have lost their "materiality" in terms of the resources previously laid down in directives such as teaching units, external exams etc. (Neumann 2001).

Today knowledge areas are termed "subjects" or "themes" and are less explicit due to lack of explicit descriptions of aim and content of each subject. The model below indicates how decisions about the organization of knowledge have been pushed down through the recontextualization fields (see Fig. 1 below). The contemporary syllabuses made at institutional level currently describe the learning objectives and knowledge content in mainly general terms, and the cooperative planning of teaching in the various subjects is taking place at the lowest level (Fig. 1).

In the NE case, a division of disciplines still remains in the formal documents, but also here the boundaries between them remain unclear. It is worth noting that NE includes disciplines from both human and science cultures. A crucial difference is that the human disciplines such as "Nursing", "Ethics", and "Sociology", are less demarcated than the science disciplines, such as "Anatomy and physiology" and "Pharmacology". The hard science disciplines are still independent course units which have maintained a strong classification (C+). This corresponds to the insight about differences in human and science cultures developed by Bernstein and expanded upon more recently by K. Maton and J. Muller and others (Bernstein 2001) (Muller 2011) (Maton 2011)(Snow 1993).

Table 1. Analytical model for curriculum analysis (Larsen 2014).

		From approx. 1960 – 2012				
		Period 1	Period 2	Period 3	Period 4	Period 5
Recontextualization fields	State/ Ministry	Disciplines	Disciplines	Main topics	Main topics	Main topics
	Institutional Curriculum planning	Disciplines	Disciplines	Disciplines	Subjects/ themes	Main topics
	Teams and Individual lecturers	Disciplines	Disciplines	Disciplines	Subjects/ themes	Subjects/ themes

Notes: The period division marks new reforms. Analytical results from the one case, CAE, are shown, but simplified.

"Disciplines" have lost power from top level. Learning goals are mainly orientated towards "main topics". Decisions about knowledge content are increasingly made on the lower levels.

3.2 The role of PBL

One of my main arguments, arising from the historical research perspective, is that PBL has entered the scene as something which should compensate for the loss of strength in classification and framing of the disciplines. No matter what reasons educators may have stated for their employment of PBL, a historical necessity has risen for a pedagogical concept that could provide a legitimate framework for weaker classification and framing of disciplines. Thus the curriculum change is a history of moving towards *integration* (Bernstein 1971). If not PBL had been introduced, another pedagogy with similar properties would have been needed to cope with this development.

The problem orientation in PBL removes the focus from the disciplines to a "problem" and makes the disciplines/subjects a function of that problem. Disciplines should no longer be learned by their inner logic - an *introjection interest* "I", but instead problems should be *projections* of external practices, whose rationality foreground disciplines "in their own right" and direct what knowledge to be learned from which discipline in order to reach a solution.

Thus the analytical approach gives an understanding of the contemporary organization of knowledge in a curriculum as a formation of eroded* disciplines. This corresponds to an increased *"regionalization"*, where disciplines become subjects which are

* It is the materiality of the disciplinary discourse which erodes, (i.e. physical, organizational and administrative resources)

more orientated towards external fields of practice (Stavrou 2009). Again this is mostly seen in CAE and less in NE.

3.3 Nursing education (NE) – Reaching out for practice and the academic world

A typical PBL course in NE lasts for a few weeks and takes its starting point in a Patient case story. A course is then followed by a similar new one. Students work in groups of 6-10. The PBL courses involve a cluster of disciplines/subjects with "nursing/care" being the central disciplinary scope. Humanist subjects such as "Ethics", "Philosophy and religion", "Sociology" and others are supplementary subjects. In addition, science subjects such as "Anatomy and physiology" can also be included.

Groups of students then work with recommended texts and receive lessons in the various subject areas. Each case work finishes with an oral presentation for the tutor.

Learning goals and assessment criteria are currently aimed at the cluster of subjects rather than to the single subject. The weakening of disciplinary boundaries has not happened so extensively in NE as it has in CAE, and it is worth noticing that the science disciplines have kept their strength. They still possess explicit learning goals and assessment criteria. In the PBL case work, students are required to discuss various theories in relation to the case story, thereby challenging their own norms, feelings and experiences.

The humanist theories are of a different kind than the science disciplines. The former have most often alternative views to the same problem, and the theories do not necessarily "speak together" due to different paradigms (Martin 2011)(Kuhn 2013). Furthermore, the chosen theories for the nursing field are less instructive and more interpretive. Much nursing theory is considered as being on a "meta-level" and speaks a language from the academic world. It is highly theoretical and difficult to operationalize into a specific practical problem of care (Kirkevold 2000)(Chinn, Kramer 2005). It also means that the cluster of subjects in the PBL courses is more loosely associated than for example in CAE.

All in all this draws in two directions. The PBL case model attempts to hold on to the practical issues of the patient case, but the theories, which are available for analytical use, are highly abstract. Although the disciplines form a region – a cluster of disciplines/theories - it is quite obvious that the curriculum designers strive at both the academic world and the practice world. Both an introjective interest and a projection interest are prominent.

Associating the PBL courses in NE with the previous curriculum typology by Sarakinioti, one might say that this curriculum type positions itself somewhere between 3 and 4 (see above), but with a significant interest of both introjection and projection, which stretches the curriculum to the extreme. Thus the modality could be described as

C-, F'+, I+, P+ where F'+ indicates that a *new* framing is established around the cluster of subjects – a *re-framing* established by PBL.

Obviously it is challenging for the students to read and understand such theories and to build up a coherent argumentation covering the practical issues of the PBL case. My analysis shows that in some PBL courses the study work turns into practicing academic methods and "ways of working" rather than coming to the core of the actual specific content of the theories. In such cases, there is a risk that the curriculum switches to a generic mode, which may not be what was originally intended. In recent years, a wide range of knowledge researchers have been critical to the idea of developing generic skills, that is meta skills assumed to apply to all subjects, all regions and all fields of practice downplaying the specific basis for such skills (Beck, John & Young, Michael F.D. 2005)(Moore 2011) (McNamara 2010). A crucial question is if this PBL case model, together with the theoretical resources available, actually allows the students to strongly connect theory and practice, or the two domains seriously lack connectivity?

3.4 Constructing Architect Education (CAE) – Simulating practice world

In the CAE case, the PBL idea is linked to project work. Each project runs for one semester (six months) and is carried out in groups of 3-4 students. The projects relate to technical house design and have a new theme each semester. Projects are introduced by a brief case description about client demands, site conditions, etc. The project work is the main curriculum unit which almost all other disciplines/subjects and courses relate to. During the preparation of teaching, lecturers coordinate lessons from various subjects "Building Design", "Statics", "Technical installation", etc. so that the knowledge content from the subjects fits well with the students housing design in the projects. My classroom analyses which follow the document study indicate that the lecturers try to reinforce the weakening of the single disciplines that has taken place on the upper decision levels in the curriculum development (see diagram above). However, there are still some spaces for the students to make priorities in their projects as further explained below.

As most of the subjects connected to the project work share common roots in the natural sciences, they are characterized by a hierarchical knowledge structure (Bernstein 2000 p. 161). Contrary to the humanist subjects in NE this means that the natural science subjects can more easily integrate due to a common language.

In carrying out the project work, the students are able to establish strong inferential links between the various subject areas as those areas speak to one another (Lundquist 1998)(Brandom 1994). Thus they can be connected through logical reasoning without deeper reflection about their relevance. Knowledge resources, such as theories, procedures, techniques etc. are selected within each of the above-mentioned subjects and made available by the lecturers. From this cluster of subjects it is then up to the students to apply the knowledge resources in their housing projects. It is almost like a

jigsaw puzzle. The pieces are made available by the lecturers, but put together by the students. Some few pieces may not be necessary and others may need slight modifications, but completing the house design is to make "knowledge pieces" fit together.

Although problem orientation is supposed to be the main principle in the PBL project work, theories and procedures are not selected on the basis of an "ill structured" problem in this case. Contrary to the NE case, the relevance of any abstract theory is not part of the student's analytical reflection since abstract knowledge is already specified and made available for application in the way it is re-contextualized by the teachers.

Consequently the PBL work seems to function as a simulation of a working process for Constructing Architects in the part of the industrial world which provides technical house designs. Thus the PBL curriculum in CAE represents a significant version of regionalization and projection interests (P), where contemporary needs and demands of the industry have a major influence on the selection of contents and also in the way of working as a student. With reference to the above curriculum types, this curriculum can be described C-, F'+, I-, P++, again F'+ as indicating a re-framing of the weakened disciplines/subjects.

The crucial question here is what consequences in general it may have on the students' knowledge building if projection interests go too far. The students risk acquiring fragments of knowledge which are too closely tied to an empirical reality.

4. Conclusion

The two empirical cases NE and CAE are rooted in very different knowledge cultures and exhibit different knowledge paradigms from both human social and natural science. Thus the analytical results may represent a large range of professional educations in Denmark.

The trends of marketization and academization have resulted in significant curriculum changes for both cases. Common to both is that the once strongly classified and framed disciplines have lost strength as independent curriculum units and have gradually turned into inter-disciplinary clusters. Also common to both is that PBL seems to act as the new framing of such clusters (F'+), but in such a way that a relatively large space for students' dispositions, preferences and habitus is opened, so at the same time the curricula have moved towards a stronger knower code.

A difference between NE and CAE is how the students are expected to build knowledge. The NE curriculum outlines a huge gap between abstract nursing theories and the empirical referents which is difficult for the students to close. This is due to both the orientation towards the intellectual field and the practice field - the introjection and projection interests.

The CAE curriculum offers a completely different knowledge building. Due to a strong projection interest, theories and methods are contextualized into tools by educa-

tors and thereby “made ready” for students to apply in producing their house designs. Thus students almost imitate design processes the way they are carried out in the industry.

These similarities and differences show what a large range of curriculum models and pedagogical practices PBL as a pedagogical concept is employed for. It seems that PBL immediately suggests itself as a model, which ensures acquiring both theoretical and practical knowledge. Thus some risks are worth discussing:

Educational programs employing PBL may risk falling into a generic mode where students are mainly developing general competences, meta skills and learning-to-learn abilities without getting to understand enough of the specific disciplinary content. Another risk is that educational programs become trapped in knowledge functionalism, where theoretical tools are only seen as means for working out products. In such cases, student learning may seem immediately useful for employers, but the knowledge structure that the students have built may turn out insufficient and non-transferable when they are challenged in new settings. This should raise a critical discussion which I think has been lacking in PBL environments, i.e. how is knowledge actually organized and structured in each PBL model applied?

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Summary

Two main trends have been particularly prevalent in professional education over the past few decades. One of them is marketization, which have influenced education in general, mainly due to changes in governance in the public sector with more emphasis on consumer satisfaction etc.

Another trend in the same period has been an increasing academic orientation resulting from political initiatives in professional education such as stronger links between research and teaching and standardized procedures and frameworks implemented through the Bologna process. Both trends have affected the organisation of knowledge in curricula, but in different directions. Marketization has emphasized the applicability of knowledge to make students ready for the labour markets' current and specific needs. Academization has put focus on the scientific character of knowledge, thus emphasizing abstract and theoretical thinking having knowledge as an aim in itself.

To meet both trends, problems and cases from the professions are more directly projected into the learning programs. Disciplines that were previously separate entities in "their own rights" must now be considered as inter-disciplinary clusters of subjects contributing to form a solution to the practical case or problem. At the same time, the students' process of combining such different knowledge areas should somehow reflect an academic way of working.

In the chapter the issues are discussed by means of sociological theories of education, especially theories and concepts by Bernstein. Two empirical case studies – representing very different educational cultures - have shown how marketization has opened for the study work to get more orientated towards problems of practice and at the same time moved towards academization by giving more emphasis to developing students' skills in assessing knowledge relevance, applicability in the context etc.

One main point is that these two trends have paved the way for the introduction of PBL in professional education. At first sight, PBL accommodates both trends, but there is a dilemma in seeking a rational application of knowledge motivated by external requirements, while – at the same time - leaving assessments and critical reflection of the knowledge relevance to the students.

This chapter suggests an increased discussion of the risks involved in this dilemma. One risk is to fall into generism where students develop competences which are too general and too far away from a detailed understanding of specific disciplinary content. Another risk is that the students' understanding of knowledge becomes locked into specific problems and issues without being abstracted sufficiently to become useful in new settings. In the future, PBL educators need to be increasingly aware of those risks by putting more attention to how the organization and structuring of knowledge are actually promoted by each specific PBL model.

CHAPTER 9

Education of managers: learning and teaching methods enhancing students' creativity

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1. Introduction

Dynamic changes in society require by teachers/educators new approaches that can better motivate students and mobilize their creative potential. The importance of creativity lies mainly in its close link to innovation and innovativeness and in a fact that it is viewed as a determinant of socio-economic development of the businesses, regions and countries. According Gilford (1950, in Hossieni-Khalili, 2011) creativity is a collection of individual characters and abilities and means thinking in different dimensions. Strenberg (1985, in Hossieni-Khalili, 2011) indicates elements that are necessary for creativity: having interest to risk, refusing limitations, having ability to make new and particular things, asking questions and building a lot of hypotheses and being curious.

Currently there is a shift towards fostering students' creativity i.e. a tendency to nurture and develop the creative potential, enhance the creativity and increase innovative thinking of the students. Creativity is according Guilford (1959, in Chen, 2011) "an essential mental activity for human beings" which requires a confluence of six distinct but interrelated resources: intellectual abilities, knowledge, styles of thinking, personality, motivation and environment. In brief, it can be seen that "creativity" is based on experience and signifies breakthroughs of old concepts and the

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adoption of new methods (Sternberg & Lubart, 1995, 1996 in Chen, 2011). It can be said that creativity is based on experience and signifies breakthroughs of old concepts and the adoption of new methods (Chen, 2011). According to Biggs (2002, in Sadeghi & Ofoghi, 2011) creativity involves the extended abstract outcomes of learning like hypothesizing, synthesizing, reflecting, generating ideas and working with problems that do not have unique solutions.

As reported by Ali Taha and Tej (2012) every person (mentally healthy individual) has the potential for creativity. Important is whether this creativity is enhanced and develop or not. It is possible to train and develop creativity (through the activity). Many educational reforms intend to incorporate creativity into the curriculum. Fostering and enhancing students' creativity as well as improvement of students' problem solving ability has become a crucial issue in higher (managerial) education.

2. Creativity in management education

Modern managers need creativity and innovative thinking particularly due to the rapidly and unpredictably changing world, intensifying competition and new technologies. Range of competencies necessary to fulfill responsible roles in the management of companies/organizations is becoming wider. One of the important skills of the modern manager is creativity, ability to solve problems and think "out of the box". These aspects should be necessarily reflected in the education of future managers who should not only be able to "manage" the creativity of employees, but they must be creative and innovative and thus be prepared for sudden changes in the business environment as well as within the organization.

According Reckhenrich et al. (2009) managers often face a situation in which strategic questions, leadership issues and complex organizational situations are not manageable in a routine manner and the need for creative solutions occurs. The more unusual a situation (it means that managers cannot draw upon experience or established routines), the more it calls for a creative solution. In that sense, creativity is seen almost as a prerequisite to manage change and renewal, it is a key skill for leaders and organizations, not only in order to adapt to change, but also to proactively shape industries and markets (Reckhenrich et al., 2009).

Increasing demand for skilled and creative people (employees) necessitates the modification of conventional (traditional) teaching and learning processes and shift towards the use of creative, innovative, activating and experiential forms of teaching and learning. Education is – according Gustina and Sweet (2014) – perceived as the place where the creativity is inculcated in upcoming generations to prepare them for the challenges nations will face in future years. "The current global interest in the development of creative thinking for all areas of education requires teachers at all levels to construct learning experiences that generate not only creative products but also creative processes" (Gustina&Sweet, 2014) .

Sadeghi and Ofoghi (2011) argue that enabling students to be a creative should be part of a higher education experiences and missions. Their argument is that "people generally feel more fulfilled and motivated if they are able to be creative". The goal of higher education should be to help students to develop their full potential and to understand and develop their unique creativities.

Recently becomes very popular the concept of *creative teaching*. In this regard Cardoso de Sousa (2011) emphasizes that there must be made the distinction between the creative person who happens to be a teacher, and the act of teaching in a creative way. The basic difference between traditional and creative forms of teaching concisely explains Hosseini (2011) who states that "traditional methods emphasize direct transmission of knowledge and maintain these processes through inflexible structures which limit the engagement of learners in innovation, discovery and mental growth" whereas "problem-solving and inquiry oriented approaches offer opportunities for exploring and discovering complexities, involving learners with the process of learning, and enhancing internal motivation".

Table 3. Comparison between „traditional (conventional)" and „creative" teaching

„Traditional" teaching	„Creative" teaching
The student goes to school to acquire knowledge which has existed for a long time and is handed down on authority.	The student goes to school to acquire skills which enable him/her to continue learning to deal with unknown/ unpredicted events and challenges. Part of these skills involves the ability to acquire data (knowledge) necessary for the task in hand.
Subject matter taken on authority is educative in itself.	Subject matter provides the raw material for learning but has value only when put to use in relevant and meaningful ways.
The best way to set out subject matter is in unassociated fragments or parcels.	The best way to attain knowledge is through active, experiential learning in a setting meaningful to the individual.
A fragment or parcel of subject matter is the same to the learner as to the teacher.	What is relevant, meaningful and sensible to the learner varies according to each individual's background, experience, characteristics and needs.
Education is supplementary to and preparatory to life, not life itself.	Education involves growth, and is, therefore, a component of living.
Since education is not present living, it has no social aspects.	Personally meaningful learning involves interaction and effective communication with others.
The teacher can and should furnish the purpose needed for the acquiring of knowledge.	The learner's needs and involvement provide the initial purpose for creative learning.
Working on tasks devoid of purpose or interests is good discipline.	It is important to involve the learner in choosing tasks which are interesting and have relevance for the learner, or to find ways of making given tasks interesting or purposeful to the learner.

The answer to the problem is more important than the process.	While solution to problems may have immediate importance, learning a problem solving process has great long-range importance.
It is more important to measure what has been learned than it is to learn.	It is both possible and important to document the impact (effect) and value of creative learning.

Source: Isaksen and Parnes (1992, p. 427, in Cardoso de Sousa, 2011)

Fortunately, several forms of instruction aimed at the development of creativity are popularized and quite often used on seminars and lectures in (managerial) higher education, for example case studies, problem solving and computer simulations. According Hosseini (2011) an approach based on problem-solving can be used individually or collaboratively. Advancement of thinking skills is most successful when it makes connections between the curriculum and students' real problems and questions. Author adds that educational strategies like brainstorming, questionnaires, research projects, role-playing, and study of force fields support creative problem-solving and question-oriented pedagogies.

Ronald A. Beghetto and James C. Kaufman (2013) stated that „creativity has become a hot topic in education" and there are many voices (media, government officials, education policymakers etc.) calling for including student creativity in the curriculum. To achieve this goal is essential clear understanding of the nature of creativity itself. Authors present five fundamental insights that can help/guide educators in their endeavour to integrate student creativity into the everyday curriculum (Beghetto & Kaufman, 2013):

1. *Creativity takes more than originality*. The first question educators should address concerns: What is creativity? People commonly think of creativity as the ability to think outside the box, be imaginative, or come up with original ideas. But creativity combines both originality and task appropriateness and those teachers and educators who understand this are in a better position to integrate student creativity into the everyday curriculum in ways that complement, rather than compete with, academic learning.
2. *There are different levels of creativity*: some instances of creativity occur every day, other instances of creativity redefine the way things are done (for example, smartphones) or even transform history.
3. *Context matters:* common problem is a narrow focus on convergent teaching and learning that can suppress creative thinking i.e. certain contexts can curtail and suppress creativity. School environment often send subtle messages that play an important role in determining whether students will share their creative insights and have the opportunity to develop their creative competence.
4. *Creativity comes at a cost.* Creativity is often associated with fun and frills. According Kaufman (2009) creativity can have benefits that transcend temporary enjoyment. It can produce effective solutions to highly complex societal problems;

lead to higher levels of career success; and create intense personal enjoyment, engagement, and meaning in life. That is why part of encouraging creativity includes (should include) helping students become aware of the potential costs and benefits associated with creative expression – it will help them to determine whether the risk is worth it.

5. *There's a time and a place for creativity.* Accomplished creators know when to be creative. Teachers/lecturers need to teach how to read a situation and determine whether and how to express one's creative ideas, insights, and behaviours. Students need to develop creative metacognition which is a combination of creative self-knowledge (knowing one's own creative strengths and limitations) and contextual knowledge (knowing when, where, how, and why to be creative). Educators can help students develop their creative metacognition by providing them with informative feedback on their own creative strengths and limitations.

3. Research methods

The aim of this chapter is to present our experience with teaching and learning approaches and techniques enhancing creativity and creative thinking of management students applied on the course "Creative methods in management and managerial games" (CMM&MG). This course is included to the courses on the master degree (second year of study) at the Faculty of Management, University of Prešov (Slovakia), and amongst existing mainstream courses provides the best possibilities for applying alternative teaching and learning methods with an emphasis on creative thinking and problem solving. The chapter makes use of empirical data from a survey among students detecting their opinions and perceptions of creativity supporting learning methods and techniques applied on the above-mentioned course.

On this course students are acquainted with selected creative and innovative methods and technique used in management. On seminars students apply acquired knowledge through computer simulation (management economic simulation exercise on the principle of entrepreneurship of production companies in the same market) and practice individual creative techniques and methods such as:

1. managerial simulation games (supported by ICT);
2. the techniques aimed at generating ideas and solving problems as brainstorming, brainwriting, case study or "lotus blossom" technique;
3. self-discovery methods e.g. self-image and "animal family" (self-reflection methods adapted from psychology);
4. methods of team development (teambuilding exercises);
5. visualization of possible problems causes through the Fishbone diagram (cause and effect diagram);.

An important part of the evaluation of the educational process is the feedback survey. On the CMM&MG course the feedback is realized at the end of the semester. It has the form of a questionnaire survey which are detecting students' views on creative methods in teaching in general as well as their attitude toward particular methods and techniques applied on the course. In the following section, we offer partial results of a survey (or questionnaire feedback).

Research sample consists of full-time students who passed the CMM&MG course. This course is designed for full-time and part-time students, but our target population is only full-time students, since part-time students do not practice full set of creative techniques and methods applied on a given course. We used a total population study - the entire group of full-time students who attend the course were surveyed. We do not receive survey responses from all (100% of the) population – on survey participated approximately 75% of the population and this number is sufficient in order to achieve reliability and validity. Data was collected over four academic years: 2010/2011, 2011/2012, 2012/2013, 2013/2014. Total number of respondents (students) participated in the survey is 579.

A scaled questionnaire was used for the collection of primary data. The questionnaire contained 21 items that were scaled on five-point Likert scale (1 - strong agreement, 2 - agreement, 3 - neutral, 4 - disagreement, 5 - strong disagreement) on which respondents expressed agreement with the statement/item (positively formulated statements/sentences). When describing the results (population parameters) were use averages (central tendency) of responses. The lower the arithmetic mean (average) of responses, the higher is the tendency to agree with the statement.

4. Research results

In the following text we present partial results of the survey.

a) The survey investigated whether students were aware of creative techniques and methods which were discussed and exercised at the course before attending/passing the course. On a five-point scale students expressed the level of agreement with the statement: "Management games and methods applied at the CMM&MG course was for me something new". The survey results (average response was 1.52) clearly showed that with many games and methods become students acquainted on the course.
b) In the second item we investigated whether managerial games and methods applied to the CMM&MG course are interesting for students. The results were truly positive. Methods and techniques applied on the course students find interesting - the responses score (arithmetic mean of responses) is 1.39.
c) In addition to interest, it is important methods and activities used on the course to be also inspiring and motivating. In this context, we investigated whether the

methods and techniques used on the CMM&MG course have been motivating for students. Achieved score responses (arithmetic mean of 1.96) represents general agreement with the statement, but this score is worse than the score achieved in the previous question. This surprising finding suggests that there is a certain difference (gap) between the interest and attractiveness of games and methods applied on the course and their ability to motivate students.

d) Range of methods and techniques applied on the course is broad and therefore we wonder which one is the most popular among students. We examined how students "like" individual methods and techniques applied on the CMM&MG course. The various techniques and methods were classified into larger groups in the context of course curriculum and content of seminars. Based on the score achieved i.e. the arithmetic mean of the responses (the agreement with the statement) we sort the different groups of methods in terms of popularity (Figure 1).

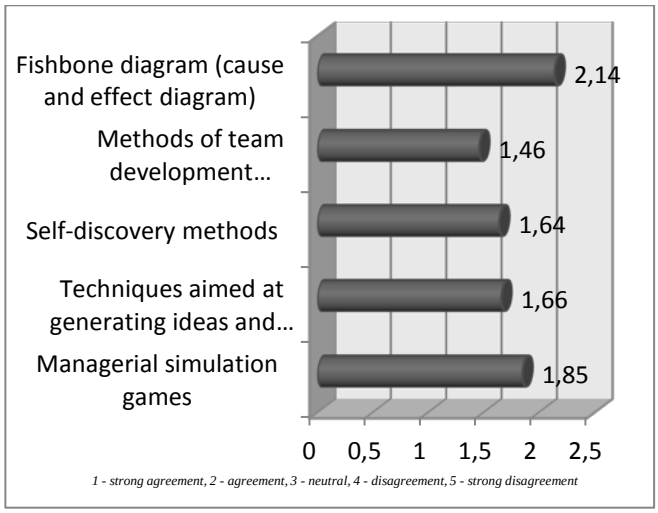

Fig. 1. Order of methods and techniques in terms of popularity
Source: authors

The results showed that the most popular methods and techniques applied on a given course are methods aimed at team development (exercises and games that contain structured situations involving simulated problems and conflicts which affects the individuals' behaviour and the atmosphere in the group) followed by self-discovery methods (self-reflection) and the techniques aimed at generating ideas and solving problems among which is the most popular brainstorming and reverse brainstorming.

e) Important aspect of assessment of the quality in higher education is methods, forms and techniques of teaching. In this context, we investigated the attitude of students to traditional and creative methods in general (Figure 2)

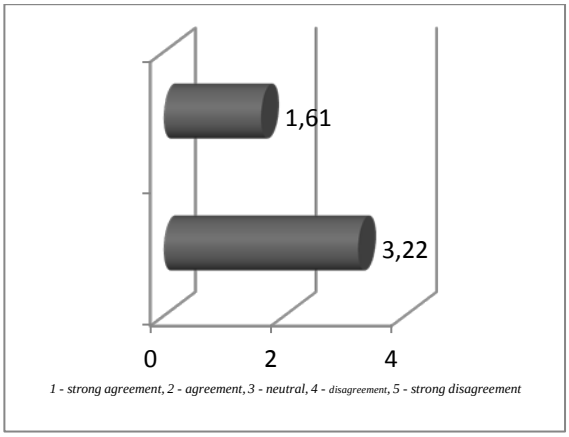

Fig. 2. Popularity of teaching/learning methods
Source: authors

- We were interested in attitude of students towards traditional forms of teaching and learning (that still dominate in our school system). Respondents were asked to express their agreement with the statement/item: "In general, I prefer the traditional (conventional) method of teaching and learning on the seminars and lectures". Score (responses average) of 3.22 indicates the trend of disagreement with the statement.
- We examined whether students would like to see and experience more creativity and creative methods in seminars and lectures (over the entire study at university). Score i.e. arithmetic average of the responses was equal to 1.61. This affirmative tendency (tendency to agree) indicates that students would appreciate a greater degree of application/implementation of the creative methods and techniques in the teaching/learning process.

f) In discussions with students often appears the requirement for greater interactivity. Therefore, in our survey we investigated whether students would appreciate more interactivity and interactive methods on the seminars and lectures. Achieved score (1.73) indicates this trend i.e. demand for greater interactivity.

5. Discussion

As noted by Tej and Ali Taha (2010) although the student community is certainly no longer "classical", still majority of educational processes are carried out by classical teaching/learning methods and much of education is focused on memorizing and reproducing of subject matter. Easy accessibility (or even excess) of theoretical information (mainly in electronic form on networks) as well as other social factors caused that there is predominance of theoretical information and absence of practical experience. That is why is necessary to allocate more time and space just on gaining practical ex-

perience. In this context, it appears as a suitable alternative to use innovative approaches in education based on creative basis.

Shortcoming of traditional methods is a fact that they transfer knowledge in finished form which could support and encourage students' mediocrity and passivity and they are carried out in the mass form. In traditional teaching prevail informative-receptive and reproductive methods. Creative methods, on the other hand, enhance students' motivation, logical and critical thinking as well as problem-solving skills.

Gustina and Sweet (2014) suggest that due to impact of creativity on both economic development and personal development and wellbeing the educators emphasize inculcating creativity into students. Authors refer to Craft (2006) who argues that education has a dynamic relationship with shifting world of employment and the wider economy. Accordingly, what is considered significant in terms of educational achievement is changing - it is no longer sufficient to have (depth and grasp of) knowledge. In addition to knowledge is important creativity which is critical to surviving and thriving, because it is the creative process (the sequence of thoughts and actions) which – according Groenendijk et al. (2013) – leads to novel and useful products.

On the seminars and lectures conducted exclusively by creative ways students obtain many value-added managerial competencies. They have to adapt to different assignment of the case study and simulations to “survive” and succeed in a highly competitive labour market and also in business, they must figure out which characters help them to achieve it. Creative approach and the potential of ICT simulations allow the teacher to change/vary game “environments” in which hereby change many essential features and situations and student - future manager - thus learn how to react in a particular unstable environment. In such approaches are possible (usable) processes of visualization, abstraction, experiment that ultimately lead to internalization of topic learned and experienced as well as to internalization of new skills and competencies. Confirmation of the correctness and appropriateness of creative approaches in teaching is the feedback from graduates who after graduation place without any problems on the labour market - through their creativity which they demonstrated in selection procedures (work positions in tourism, banking, etc.).

6. Conclusion

The survey results showed that creative methods and techniques are positively perceived by students – in the context of CMM&MG course as well as in generally throughout the whole learning process. Among students are the most popular the creative techniques and methods for team development and cooperation as well as self-discovery methods. The survey also showed that students are weary of traditional forms of learning and hanker for new, more interesting, attractive, experiential, innovative forms of learning in which they will not be in the role of passive recipient of information/knowledge, but they will be “active co-actor” in the learning process.

Creative methods of teaching and learning (such team games, role playing, case studies, simulations, self-reflection) enrich the teaching and learning process and are perceived interesting, encouraging, activating by students. Our personal experience shows that "creative" methods and techniques (applied on seminars on the CMM&MG course) are popular, course of seminars s very dynamic, inspiring and funny.

Based on the facts and own experience of using creative teaching methods and management simulation exercises can be concluded that in management education is necessary to modify the curriculum which currently lacks synthesis and creativity and to implement new pedagogical approaches, teaching methods and learning activities to management education – these would be more flexible, experiential and informal.

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Summary

Creativity is in current complex and volatile business environment one of the basic managerial competencies needed for success in business, especially because it leads to innovation. This fact should necessarily be reflected in the education of future managers. There is a call for using innovative and effective pedagogical (instructional) strategies, for creativity integration into teaching practice as well as for embedding creative approaches into students' learning process. In this respect, the question arises whether the preparation and education of managers at universities is appropriate i.e. whether existing learning and teaching methods and procedures enhance students' creativity and support their problem solving ability.

The aim of this chapter is to present our experience with learning/teaching methods and activities enhancing creativity and creative thinking of management students applied on the course "Creative methods in management and managerial games" that provides the ideal possibilities for applying alternative teaching and learning methods with an emphasis on students' creative and divergent thinking, generating ideas and problem solving ability. The chapter presents partial results of a survey among students of Faculty of Management, University of Prešov in Prešov, detecting their opinions and perceptions of creativity supporting learning methods and techniques applied on the mentioned course. Based on the research investigation, we identified the most popular methods and techniques applied on a given course. The survey result also reveals a prevailing tendency to use traditional forms and methods of teaching and learning (in which dominate memory-based instruction and transmission of information and knowledge in the finished form) despite the fact that respondents (students) do not prefer this form of learning.

Acknowledgement

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CHAPTER 10

Education and professional development for customs auditors

Danutė ADOMAVIČIŪTĖ *

1. Introduction

Globalization has influenced the changes in customs procedures and inspection processes. Customs are engaged not only in the control, breach prevention and administration of duties and taxes, but also carry out the broader tasks, such as security assurance, simplification of trade conditions and protection of the economic interests of the countries. Globalisation as well as rapidly changing business models and technical progress are presenting new challenges to the effectiveness and efficiency of the customs activities.

In the global economic conditions customs activities remain of a great importance. In the European Union customs deal with the policy of duties and international trade. They are also responsible for the efficient security of the EU financial interests. Globalisation as well as rapidly changing business models and technical progress are presenting new challenges to the effectiveness and efficiency of the customs activities. It is also influenced international trade, the volume of which depends on the efficiency of logistical operations - from the modelling and management of the logistics process, helping to control the flow of goods crossing national borders. The process of the worldwide transportation of goods is very long and complicated.

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After analysing the flow of goods, it can be stated that a long time required for the customs procedures can be named as one of the international trade's barriers. It can be stated that public administration needs a new synthesis, one that will coherently integrate past theories, conventions, principles and practices of enduring values with new ones that respond to today's challenges (Bourgon, J., 2011). There are several outstanding issues to be resolved. The Future Customs Initiative (**Strategy for the evolution of the Customs Union, 2008)** contains the strategic objectives of the customs union. It provides a policy framework to steer developments and new initiatives with consistency and coherence. It aims at complementing the above-mentioned reform of the legal and IT environments, and it explicitly refers to the importance of the human aspects and working methods of the future development of the customs union, including resources and skills.

Nowadays the rapidly growing international trade as well as new technologies of the production and transport require the goods to be delivered to the recipient exactly at the time when they are needed. For this reason, customs formalities must be carried out as quickly as possible, without disturbing the flow of goods and at the same time not reducing the efficiency of the customs control. The customs are involved in the procedures of the international trade regulation control. Therefore, inconvenient or inflexible customs procedures have a negative impact on the business competitiveness. While improving their work, customs contribute to the strengthening of the European Union business enterprises' competitiveness in the world markets at the same time imposing resources to the very place they are needed. Here, the important role played audit-based customs control. The increase in customs audit activities should coincide with a commensurate decrease in border controls, based on an adequate risk assessment, it may be considered to reduce the number of staff in ports and border posts and to increase staff in customs audit teams. Customs audit focuses on persons involved in the international movement of goods. Customs audit is an effective tool for customs control because it provides a clear and comprehensive picture of the transactions relevant to customs as reflected in the books and records of international traders. At the same time it enables customs administrations to offer the trader facilitation measures in the form of simplified procedures.

It may be noted that there are not researches in the scientific literature analysing the matters of customs audit. After analysing the works of scientists from different countries on the topics of the audit, it is clear that theoretical and practical aspects of the audit have been analysed by a number of Lithuanian scientists (Matickienė, 1997; Kabašinskas, Toliatienė, 1997; Mackevičius, 1999, 2001, 2005, 2009; Lakis, 2005, 2007; Kanapickienė, 2001, 2009; Rupeikienė, 2005; Puškorius, 2005; Daujotaitė, 2006; etc.) as well as other scientists from around the world (Burns, Hendriksen, 1972; Teilor, Glezen, 1988; Robertson, 1993; Andrejev, 1994; Šeremet, Suic, 1995; Arens, Loebbecke, 1995; Dunn, 1996; Woolf, 1997; Byčkova, 1998; Gray, Manson, 2001, 2008;

Knechel, 2001; Galloway, 2002; Arens, 2006; etc.). However, the author failed to find the works analysing the subject of the customs audit and auditors - both foreign and Lithuanian researchers did not investigate this subject in their works.

As a result, the uncharted territory of the customs audit's activities and the absence of its conception create a problem that must be solved. The research problem is often being formulated by the question about the research phenomena and their interactions. It is often being caused by the contradictions appearing in the development of any process or phenomenon. The question-problem of this chapter could be formulated as follows: what areas of the customs audit are important for professional development customs auditors? In order to solve this problem and to analyse the ongoing changes in the customs and business environment the attention of researchers and practitioners must be concentrated.

2. Aim, applied research methods, sources of data and information

Professional development is a broad term encompassing a variety of workers' interests and approaches spectrum. At the heart of professional development is the individual's interest in learning and increasing their own skills and knowledge. Customs officers who engage in education and professional development share a common purpose of enhancing their ability to do their work. Customs officers may participate in professional development process because of an interest in lifelong learning, a sense of moral obligation, to maintain and improve professional competence, to enhance career progression, to keep abreast of new technology and practices.

Customs administrations understand how important is to invest in their officers training. Many customs administrations have professional development requirements for customs officers. For example, Lithuanian customs auditors must complete 40 hours per year of professional development activities. Professional development for customs auditors refers to the acquisition of skills and knowledge, both for personal development and for career advancement. The aim of research is to identify the most significant areas of the customs auditors' for education and professional development.

A survey was the best way to collect the data. A method of the written questionnaire was used to collect the direct data needed for the research chosen. Mathematical-statistical methods were used to reason the representation of the research results and to process them. To summarize the data from questionnaires, SPSS programme (*Statistical Package for the Social Sciences*) was used.

In order to achieve the aim of this research a comprehensive analysis of the scientific, practical and methodological literature was carried out. The analysis of the scientific literature is based on the scientific studies, researches and papers of foreign as well as Lithuanian authors. The analysis of the legal acts was carried out in accordance with the legal acts of the World Customs Organization, the European Union, the insti-

tutions of the Republic of Lithuania and the customs administrations legal acts, regulations, decisions and other documents adopted by different countries. The main sources used are: monographs, published results of the empirical studies that reflect the latest aspects of customs activities, conference material, e-information.

3. Review of custom audit

The customs audit is of a great importance in the process of the customs inspection. The control based on the methods of the customs audit assures better opportunities of anti-breaches. Moreover, a faster flow of goods traffic at the external border of the European Union is assured while carrying out the most inspections at the companies' residences. Therefore, it is important to improve the customs audit combining this process with the changing business environment. This also has to do with the ongoing market processes. Recently, the customs of the EU countries began appreciating the activities of the business enterprises, seeking to gain the status of the authorised economic operator (AEO). In order to implement this, the need to explore the evaluation of business enterprises activities appeared, at the same time paying attention to the aspects of the international trade supply network.

The legal framework of customs audit is being regulated by the Community Customs Code (1992). The accomplished comprehensive analysis of scientific and practical literature helped to identify the customs audit and its place in the audit system. Customs audit is defined as a process, allowing customs officials to qualify the following entities: 1) checking the information correctness of customs declarations, entity's accounting documents and registers, business systems and all the commercial documents being of a great importance to the customs – documents belonging to companies (individuals) and that are directly or indirectly related to the activities carried out during customs procedures, 2) determining the agreement with certain criteria. The main objectives of the customs audit are the following: 1) to check the data accuracy and comprehensiveness indicated in the customs declarations, 2) to define the breaches – on the basis of which duties and other taxes are being counted - and errors of the data in the documents provided by the importers and exporters as well as other persons accepting the customs obligations, 3) to evaluate the entities' activities and compliance with the requirements.

The customs audit, unlike the other above mentioned types of audit, aiming at ensuring the data accuracy indicated in the customs declaration, can verify business enterprises commercial, accounting documents and registers, business systems and all the commercial documents that are of a special importance for customs – all those documents related to goods‘ import, export or transit-related operations. These documents belong to enterprises (individuals) directly or indirectly related to the customs procedures. The customs audit checks how customs procedures are carried out by the entities, if the goods are correctly declared in the customs declarations, if the legal acts

regulating customs procedures are applied, if customs duties and other taxes have been paid to the state budget on time and properly and so on. Customs are also a public institution and that is why the enterprises activities verification and evaluation carried out by the customs can be considered as a kind of public audit.

After analysing the scientific and practical literature, it is clear that the customs audit has features in common with other types of audit. According to the inspection area it is closest to the audit of financial reports. However, it also features the operational audit as it carries out the verifications of enterprises economic and commercial activities. Customs audit verifies the compliance with the Customs Code and other legal acts regulating customs activities and provisions – and these features are typical to the management audit. It can be stated that there is a correlation between the customs audit as well as the audit of financial reports, management audit and operational audit.

The customs audit, having in common some features of each type of audits, has also its own differences: it has its own aim of the fulfilment and other special features. The verified areas of the customs audit can be goods customs value, goods classification, origin of goods, duty preferences and import quotas, antidumping and countervailing duties, permissions issued by customs, reports submitted to the customs by business enterprises and so on. Depending on the results of risks inspections, the focus of the customs inspections can be made on one or more fields mentioned.

The international trade and customs activities are influenced by a broad set of environmental factors. That is why, customs audit area is quite tricky and complicated, requiring a broad understanding of the importance of a global context.

4. Customs auditors management and professional development

The strategic role of human resources management and development is increasing in customs. The redirection of controls from the border towards the post-importation environment poses significant resource implications for a customs administration. The increase in customs audit activities should coincide with a commensurate decrease in border controls, based on an adequate risk assessment, it may be considered to reduce the number of staff in ports and border posts and to increase staff in customs audit teams. This raises a number of considerations, including the need to retrain officials, upgrade I.T. infrastructure and consider a number of human and financial resource issues. In modern conditions of customs modernization requirements for the competence of customs staff are constantly changing and increasing, that is connected with numerous changes of the legal framework, implementation of e-customs, customs audit, increasing demands for the quality public services.

Customs officers' education and retraining is becoming an important phenomenon in customs. Education and training, both informal and formal, play a major role in the fight against tax fraud and corruption in two ways. Firstly, they provide staff with ap-

propriate professional development, thus increasing their technical competence and reducing their reliance on informal on-the-job training. Secondly, they provide regular opportunities for the organization to reinforce the integrity message. Training should focus on the standards of behaviour expected of all staff. A sense of group or shared responsibility should be fostered wherever possible.

Customs administration also can use the various elements of competency management. Competency management is a special approach to human resource management, which involves the tools and technologies that support and develop competencies. In customs it's necessary to develop an integrated system for competency management in order to develop human resources.

Competencies are the essential tools of the competency-based approach, linking and ensuring the continuity of the educational and professional spheres. The implementing competency-based approach in education has been caused by the need to meet changing and increasing competence demands. Competency is one of the most valuable assets to keep pace with an ever-changing environment (Baranova, 2013).

A competency model is a set of competencies needed to successfully perform a certain kind of work. The competency model includes not only knowledge and skills but also the ability to use them in practice, to solve new non-standard problems, the ability to develop, to adapt to changing environment, to acquire new competencies. The competency model is developed on the stage of staff planning and prediction. It’s used for education, training and retraining. Recruitment and staff selection should be based on the competency model. Personnel assessment during certification and work with reserves includes a comparison of competencies with the competency model. In this way the competency model acts as a connecting element of competency management system.

An effective system of training and education is essential for human resource development. System of customs training and education should interact closely with customs service. It is necessary to ensure continuity of educational and professional standards for customs by putting to the base of standards a scientifically based set of competencies required for professional career. Harmonization of the education systems and unification of educational and professional standards for customs will enhance the level of professionalism. The competency model could be used as a tool for integration of the educational and professional spheres (Baranova, 2013).

A combination of skills, knowledge and experience is required to carry out customs audit effectively. With the increased use of electronic recordkeeping and the complexity and diversity of global trade, the need for higher standards of training becomes increasingly important. Customs administrations should be committed to providing auditors with the levels of training necessary to equip them to perform their duties. Training department has an important part to play in ensuring that officers acquire the required skills to conduct an audit.

Customs recruitment and training policy should address the above needs. In some cases, external support may be necessary to provide the specialist skills. Auditors must maintain high professional standards when conducting customs audit (figure 1).

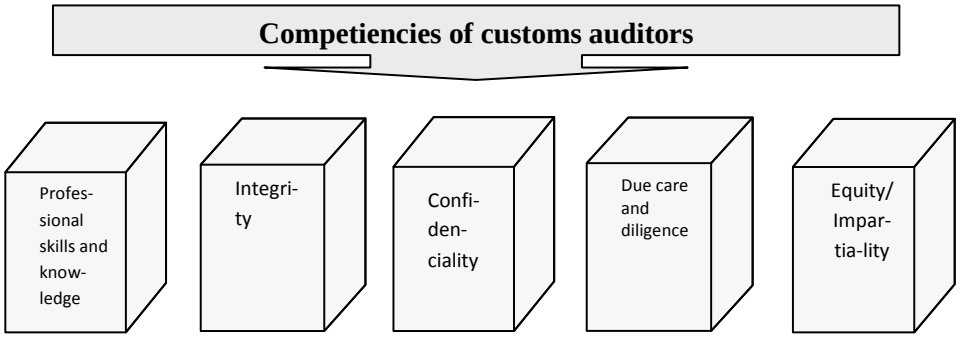

Fig. 1. Competiencies of customs auditors
Source: made by the author.

1. Professional skills and knowledge. All auditors need a range of general skills relevant to the task of auditing. These skills include:

- accounting techniques and principles, based on Generally Accepted Accounting Principles (GAAP);
- knowledge of auditing standards and procedures;
- familiarity with customs laws and regulations;
- general knowledge of customs procedures (valuation, classification, origin, etc.);
- knowledge of computer-based accounting systems;
- and a commercial awareness and knowledge of business strategies in international trade.

It is also recommended that certain staff working in audit have specialist skills for particular technical areas, such as:

- customs valuation, rules of origin, tariff classification,
- I.T.-based accounting,
- multinational corporation accounting, including transfer pricing,
- trade sector knowledge.

2. Integrity. The public is entitled to expect all Customs employees to be honest, impartial and professional. To maintain public confidence, it is therefore vitally important that Customs employees maintain the highest standards of integrity and conduct. The WCO has developed a Model Code of Ethics and Conduct (2002) that sets out the minimum required attitude and behaviour expected of all Customs officers. The Code of Ethics and Conduct describes, in very practical and clear terms, the minimum standards of behaviour required of all customs employees. These standards of behaviour shall be demonstrated by all customs employees and are to serve as a guide when making decisions and taking actions. To fully comply with the code, customs employees

must: perform duties with care, diligence, professionalism and integrity; strive for the highest ethical standards; behave at all times in a manner that enhances the reputation of customs. The Code of Conduct should be respected in the context of conducting post-clearance audit.

3. Confidentiality. Auditors must maintain adequate levels of confidentiality when accessing and examining auditees' records. Auditors should not disclose any business information they have acquired during the performance of their duties, unless national laws provide for disclosure of information in specific cases. Likewise, they should not disclose information confidential to Customs outside of their administrations.

4. Due care and diligence. Auditors should act diligently and in accordance with applicable technical and professional standards. Further, they should take due care of the auditee's property and respect company health and safety policies and requirements (e.g. wearing of safety helmets).

5. Equity/Impartiality. Auditors are required to be objective, maintain fair and just judgment over similar cases and not to treat them arbitrarily or allow bias, conflicts of interest or undue influence of others to override professional or business judgments. They should not misuse their authority over the auditee.

Should be noted that the policy problem for professional development in this era of reform extends beyond more support for teachers' acquisition of new skills or knowledge — professional development today also means providing occasions for teachers to reflect critically on their practice and to fashion new knowledge and beliefs about content, pedagogy, and learners (Darling-Hammond, L., McLaughlin, M. W., 2011). The authors define effective professional development, examine the new institutional forms that support this kind of development, and also examine ways in which existing arrangements can be rethought or redesigned to support reformers' visions of practice and teachers' professional growth. Finally, they consider aspects of the larger education policy context that foster or impede teachers' incentives and ability to acquire new knowledge, skills, and conceptions of practice.

5. Research results

During the survey an anonymous questionnaire were sent by e-mail to customs auditors in Lithuanian customs. The questionnaire was consisted of 17 indicators. The respondents were asked 16 closed questions and one open question. This allowed during the survey to avoid subjectivity. In the questionnaire for the data obtained in the survey there were used indicators with interval, nominal and grade scales.

The questionnaire was answered by 45 respondents. The respondents have been divided into three groups: those confronting the customs audit in their work from 1 to 5 years, those confronting the customs audit in their work from 5 to 10 years and those confronting the customs audit in their work for more than 10 years (table 1).

Table 1. Work experiences of respondents

	Work experiences in customs audit area	workforce	comparative weight, %
1.	from 1 to 5 years	2	4,4
2.	from 5 to 10 years	21	46,7
3.	more then 10 years	22	48,9

Analysing the research results the attention is paid to the fact that quite a lot of respondents (48,9%) had experiences in customs audit area more than 10 years. This suggests that respondents had sufficient work experience and answers to questions submitted of the competent customs officials working in the field of auditing.

According to the answers of respondents needs for education and professional development distributed as follows (table 2):

Table 2. Training needs for customs auditors

	Training areas	Respondents' answers the comparative weight, %
1.	Criminal deed to the financial system	87 %
2.	Organization of international business	73 %
3.	International commercial transactions	67 %
4.	Computerized accounting management program	60 %
5.	Performance Audit	53 %
6	Financial audit	51 %
7.	Corporate performance and analysis	44 %
8.	The company's internal control system	42 %
9.	International payments	40 %
10.	Customs auditors' communication with taxpayers	24 %
11.	Accounting	22 %
12.	Stress and pressure control	18 %
13.	Conflict resolution and management	16 %
14.	Tax administration	11 %

Analysing the research results the attention is paid to the fact that quite a lot of respondents (87%) agreed with the importance of the “Criminal deed to the financial system". Also most of the respondents have noted that significant area for professional development is “Organization of international business” (73%), “International commercial transactions” (67%), “Computerized accounting management program” (60 %), etc.

6. Conclusions

In the European Union customs deal with the policy of duties and the international trade. They are also responsible for the efficient security of the EU financial interests. In the global economic conditions customs activities remain of a great importance.

The customs are involved in the procedures of the international trade regulation control. The Future Customs Initiative (**Strategy for the evolution of the Customs Union, 2008)** contains the strategic objectives of the customs union. It provides a policy framework to steer developments and new initiatives with consistency and coherence. It aims at complementing the above-mentioned reform of the legal and IT environments, and it explicitly refers to the importance of the human aspects and working methods of the future development of the customs union, including resources and skills. The international trade and customs activities are influenced by a broad set of environmental factors. That is why, customs audit area is quite tricky and complicated, requiring a broad understanding of the importance of a global context.

Customs officers education and retraining is becoming an important phenomenon in customs. Education and training, both informal and formal, play a major role in the fight against tax fraud and corruption in two ways. Customs administration also can use the various elements of competency management. Competency management is a special approach to human resource management, which involves the tools and technologies that support and develop competencies. In customs it's necessary to develop an integrated system for competency management in order to develop human resources. Competencies are the essential tools of the competency-based approach, linking and ensuring the continuity of the educational and professional spheres. The survey results showed that most of the respondents have noted that significant area for professional development in customs audit area is “Criminal deed to the financial system" (87% noted of respondents), “Organization of international business” (73%), “International commercial transactions” (67%), “Computerized accounting management program” (60%).

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Summary

The aim of research is to identify the most significant areas of the customs auditors' for education and professional development. In the chapter the influence of education and professional development for customs auditors activities has been revealed.

In order to achieve the aim of this research a comprehensive analysis of the scientific, practical and methodological literature was carried out. The analysis of the scientific literature is based on the scientific studies, researches and papers of foreign as well as Lithuanian authors.

The customs are involved in the procedures of the international trade regulation control. The Future Customs Initiative (**Strategy for the evolution of the Customs Union, 2008)** contains the strategic objectives of the customs union. It provides a policy framework to steer developments and new initiatives with consistency and coherence. It aims at complementing the above-mentioned reform of the legal and IT environments, and it explicitly refers to the importance of the human aspects and working methods of the future development of the customs union, including resources and skills. The international trade and customs activities are influenced by a broad set of environmental factors. That is why, customs audit area is quite tricky and complicated, requiring a broad understanding of the importance of a global context.

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The survey results showed that most of the respondents have noted that significant area for professional development in customs audit area is "Criminal deed to the financial system" (87% noted of respondents), "Organization of international business" (73%), "International commercial transactions" (67%), "Computerized accounting management program" (60%).

Abstracts

Chapter 1. Agnese ALJĒNA: Business model designing tool – filling the gap between philosophy and reality

Research aim/purpose – to evaluate existing theoretical frameworks of business models and adapt them to new business environment. To describe a Business Modelling tool that can be directly applied by entrepreneurs, freelancers and artists. This chapter describes one of the possible approaches to bringing sophisticated business model understanding to real life entrepreneurs. **Research Method**– research literature review to get insights of existing business model theoretical frameworks and its development trends. Analysis of most popular Business Model design tools for entrepreneurs. **Key findings** – Businesses can be designed around 18 (14 – if simplifying time and geographical dimensions) business elements. Simple tool of grouping by 6 and playing with interrelations of elements can be reached via 3 playing dices. **Originality** – the adoptation of academic business model understanding to practical and simple tool for entrepreneurs and other professionals. **Value** – directly applicable by professionals and entrepreneurs in designing business models.

Keywords: Business model, business design tool.
JEL Codes: A290, L260, M130

Chapter 2. Beata KRAWCZYK-BRYŁKA, Katarzyna STANKIEWICZ: Developing competences for cooperation in international teams – tools and methods

The chapter presents the training methods that can be used to develop intercultural competences which is understood as the ability to make flexible changes in one's knowledge, attitudes and behaviour as a consequence of openness to cultural differences and the ability to cooperate with others, despite the identification of these differences. The intercultural competences are extremely important while working in intercultural teams which are more and more popular at the global market. The mentioned methods like: case-studies, collaborating, role-play simulations, team working, video presentations and others are presented on the basis of authors' experiences while teaching the international groups of students at Faculty of Management and Economics at GUT. The purpose of the chapter is to promote the world-renowned method: Learning by Doing, which is assumed to be the best way to develop competences is primarily taking action allowing for gaining personal experience. There are also participants' opinion presented to evaluate the used teaching methods and learning outcomes. The SWOT analysis was selected as a tool, as being suitable for the delivery of guided reflection and shaping consciousness, serving the accumulation of knowledge and assuming its practical use. The qualitative analysis of internal factors allowed for extracting four categories: "Cognitive diversity", "Knowledge and skills", "Modes of operation" and "Atmosphere of team work" .The students expressed their acceptance for intercultural diversity after being involved in Learning and Doing methods and feel much better prepared to cooperate in international environment.

Keywords: International team, cross-cultural competences, learning by doing
JEL Codes: A2

Chapter 3. Jindra PETERKOVÁ: Evaluation of managerial simulation games benefit in teaching process

Managerial simulation game JA TITAN belongs to suitable tools for teaching economical subjects. It is interactive and experiential teaching method. Students gain own experiences how to decide in concrete situation in the market such as recession in the economy, product penetration in the market, newly appearing foreign competition, etc. The students make their own decision in the sphere of price, capital investment, marketing and research and development. By playing the game they recognize market regularities. Using managerial simulation game in teaching process brings many experiences from business managing that are later used in following study and practise. At the same time students learn teamwork. Benefits from using game JA TITAN come out of realized research at the Faculty of Economics.

Keywords: managerial simulation games, activate learning process, teamwork, feedback, virtual firm
JEL Codes: A, A2, C7

Chapter 4. Mārtiņš DANUSĒVIČS: Use of business imitation games in teaching innovation diffusion

Author proposes a business imitation game as a tool for engaging business and economy students in exploration of innovative products and their diffusion in the marketplace. The game is currently called “Innovations and imitations”, and uses Bass diffusion model as a base tool for calculating market demand for innovative and imitation product. This model was developed to analyse the pace, at which a new innovative product gains its market share. By analysing different types of innovative products certain parameters can be calculated, that allow modelling the tendencies of the market to consumer innovative products and impeding imitations of this product. The game principle is based on introduction of 2-3 innovative products to the market. Teams are required to choose between producing innovative products or perform the role of imitators. The game has been a success in increasing student awareness of new product market development. It has been played in Latvia with High school pupils, students in Bachelor and Master economic and business management programs. The game is flexible enough to be adapted for players with different skills and knowledge. A more analytical approach can be used with MBA students by introducing an economic forecasting element.

Keywords: business game, imitation game, innovation diffusion, product development, market forecasting
JEL Codes: C53, O31

Chapter 5. Mirosław JAROSIŃSKI: Experiential learning as an important tool in contemporary business education

Business environment has always been changing but nowadays its changes have taken an unprecedented pace. Business environment has become more global, more technologically ad-

vanced and more turbulent than ever. As a result businesses need their managers to be better prepared not only for today but also for the future. When recruiting business schools graduates firms expect them to have lots of skills like eg. technological skills, project management skills, good communication skills or intercultural skills. Thus business schools to be competitive have to prepare their students for the future employers' needs. To do that they are changing the way they educate students. What one can observe in recent years is the shift from professor/instructor concentrated education to student and task oriented teaching process. Business schools all over the world are adopting experiential learning methods which have become an important tool in contemporary business education. The chapter reviews different forms of experiential learning emphasizing those which have been successfully tested by the author like case-based and company-based projects as well as export/import projects to name just a few.

Keywords: experiential learning, economics education
JEL Codes: A20

Chapter 6. Sally EAVES: Innovative approaches to knowledge transfer, experiential learning and SME application within business education.

This chapter foregrounds responsive, relevant and reflective pedagogy within business education. It elucidates innovative learner-centric, experiential, problem-orientated and intersectional approaches that present multi-layered and multi-stakeholder potential across teaching, research and practice. An interdisciplinary, panoptic and pragmatic perspective is adopted, underpinned by an expansive literature review and grounded in longitudinal primary research and educational development exemplars. Specifically, the capabilities, challenges and co-opportunity of university engagement in the creative sector, notably citizen and/or community driven hybrid enterprise are advanced and framed within a Quadruple Helix Model of Innovation. Mentoring networks, space re-engineering and sponsorship activities are presented as productive participatory conduits. The stance proposed aims to bridge conceptualisation with experience, addressing identified gaps between theory and practice and providing expanded learning contexts through active exposure to a diversity of cultures, approaches, tools and techniques that intersect sciences and the arts. This advances a more pluralist lens that supports a cohabitative appreciation of different ways of knowing. It fosters depth and breadth of competencies, cross-media skills literacy, entrepreneurial understanding with SME application, situational awareness, contextual humility, problem navigation and decision-making. Implications and outcomes are discussed across the teaching, research and practice continuum, impacting the culture and context of business education and curricula development, case study methodology, knowledge exchange and future research direction.

Keywords: Business Education, Pedagogical Innovation, Case Study, Knowledge Transfer, Experiential Learning, SMEs, Quadruple Helix, Hybrid Enterprise, Creative Sector
JEL Codes: I20; L17; L26; L39; M13; O31

Chapter 7. Sławomir OSTROWSKI: Project- and service oriented thinking in engineering management education

Today's generation of students should learn about project management approach at the beginning of their engineering management education. The author in this chapter describes his experience in teaching students with project and service-oriented thinking. He discusses possible ways to provide students with practical, relevant knowledge at an early stage of their education. Methods suitable for teaching and mentoring students with project management approach in non-profit organizations are presented and analyzed in this chapter. This chapter also presents a number of new learning opportunities arising from applying project and service-oriented approach to practical situations.

Keywords: project management, service, engineering management education,co-design, service design, service oriented thinking
JEL Codes: A2, A20, D8, D83

Chapter 8. Verner LARSEN: Changes in knowledge organisation and the role of Problem Based Learning

Two main trends have been particularly prevalent in professional education over the past few decades; marketization and academization. Both trends have affected the organisation of knowledge in curricula, but in different directions. Marketization has emphasized the applicability of knowledge to make students ready for the labour market's current and specific needs. Academization has put focus on the scientific character of knowledge, thus emphasizing abstract and theoretical thinking having knowledge as an aim in itself.

To meet both trends, practical problems from the professions are projected into the learning programs. Disciplines that were previously separate entities in "their own rights" are today arranged as inter-disciplinary clusters of subjects. By doing so, the students are able to aim their learning to what is necessary for working out the practical cases, problems or projects and at the same time practice an academic way of working by combining different knowledge areas, reflecting the relevance of the knowledge etc.

A main argument in the chapter is that the two trends have paved the way for the spread of Problem Based Learning (PBL) in professional education. At first sight, PBL accommodates both trends, but there is a dilemma in seeking a rational application of knowledge motivated by external requirements, while – at the same time - leaving assessments and critical reflection of the knowledge relevance to the students! One risk is to fall into generism where students develop competences which are too general and too far away from a detailed understanding of specific disciplinary content. Another risk is that the students' understanding of knowledge becomes locked into specific problems and issues without being abstracted sufficiently to become useful in new settings.

Keywords: Knowledge organisation, Curriculum, Marketization, Academization,Problem Based learning, Professional Education.
JEL Codes: Y800

Chapter 9. Viktória ALI TAHA, Michaela SIRKOVÁ, Juraj TEJ: Education of managers: learning and teaching methods enhancing students' creativity

Creativity is one of the core competencies of modern managers and therefore the development of creativity has a unique place within managerial higher education. An evidence of increased attention focused on students' creativity development are many creative-oriented courses provided by universities. One example is the course “Creative methods in management and managerial games” at the Faculty of Management, University of Prešov that provides the ideal possibilities for applying alternative teaching and learning methods with an emphasis on students' creative and divergent thinking, generating ideas and problem solving abilities. The aim of the chapter is to present authors' experiences with learning/teaching methods and activities enhancing creativity and creative thinking of management students applied on this course as well as the partial results of a survey among students of Faculty of Management detecting their opinions and perceptions of creativity supporting learning methods and techniques (applied particularly on the mentioned course). Based on the research investigation were identified the most popular methods and techniques.

Keywords: Creativity, management education, teaching methods, learning methods, simulations
JEL Codes: I23

Chapter 10. Danutė ADOMAVIČIŪTĖ: Education and professional development for customs auditors

Professional development is a broad term encompassing a variety of workers' interests and approaches spectrum. Customs administrations understand how important is to invest in their officers training. Many customs administrations have professional development requirements for customs officers. At the heart of professional development is the individual's interest in learning and increasing their own skills and knowledge. Customs officers may participate in professional development process because of an interest in lifelong learning, a sense of moral obligation, to maintain and improve professional competence, to keep abreast of new technology and practices. The customs audit is of a great importance in the process of the customs inspection. The control based on the methods of the customs audit assures better opportunities of anti-breaches. Moreover, a faster flow of goods traffic at the external border of the European Union is assured while carrying out the most inspections at the companies’ residences. Therefore, it is important to improve the customs audit combining this process with the changing business environment. This also has to do with the ongoing market processes. Recently, the customs of the EU countries began appreciating the activities of the business enterprises, seeking to gain the status of the authorised economic operator (AEO). In order to implement this, the need of the exploration of business enterprises activities‘ evaluation appeared, at the same time paying attention to the aspects of the international trade supply network. The international trade and customs activities is influenced by a broad set of environmental factors. That is why, customs audit area is quite tricky and complicated, requiring a broad understanding of the importance of a global context. The aim of research was to identify the most significant areas of

the customs auditors' for education and professional development. After analysing the scientific and practical literature, it is clear that the customs audit has features in common with other types of audit. According to the inspection area it is closest to the audit of financial reports. However, it also features the operational audit as it carries out the verifications of enterprises' economic and commercial activities. Customs audit verifies the compliance with the Customs Code and other legal acts regulating customs activities and provisions – and these features are typical to the management audit. It can be stated that there is a correlation between the customs audit as well as the audit of financial reports, management audit and operational audit. The customs audit, having in common some features of each type of audits, has also its own differences: it has its own aim of the fulfilment and other special features. The verified areas of the customs audit can be goods' customs value, goods' classification, origin of goods, duty preferences and import quotas, antidumping and countervailing duties, permissions issued by customs, reports submitted to the customs by business enterprises and so on. Depending on the results of risks' inspections, the focus of the customs inspections can be made on one or more fields mentioned.

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