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MANAGEMENT EDUCATION FOR INNOVATION: DEVELOPING A STUDY COURSE TO IMPROVE INNOVATION CAPACITY OF MBA STUDENTS

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MANAGEMENT EDUCATION FOR INNOVATION: DEVELOPING A STUDY COURSE TO IMPROVE INNOVATION CAPACITY OF MBA STUDENTS

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1 INTRODUCTION

Rapid technological changes, the information revolution and increasing globalization of business activities have intensified competition among countries for export markers, capital, R&D, and skilled workers. The development of service, information or knowledge societies is a process that may be compared to the emergence of industrial society during the nineteenth century in terms of the social impact it has had. With the appearance of knowledge society comes innovation – "the ability to implement a new or significantly improved product, good or service, or a new organizational method in business practices, workplace organization or external relations" (OECD & Eurostat, 2005, p.46). The perception of innovation as an important production factor is becoming more and more widespread. The boost of literature from policy makers and academics alike is a good indicator for the interest in the knowledge-based economy and thus in the innovation process (e.g. Community Innovation Surveys, European Union, carried out since 1992; Oslo Manual, a joint publication of OECD and Eurostat; The Innovation Imperative: Contributing to Productivity, Growth and Well-Being published by OECD in 2015). There is no doubt that innovation is the word of the day. But how does one foster an environment that encourages new thinking and nurtures the practitioners who will exercise it?

For years, since the time the innovative capacity became the focus of attention, science and technology have been placed in the heart of it. However, more recently the calls to recognize that business and management are critical enablers of innovation along with science and technology have started taking place in the discussions on innovation (Institute for Competitiveness and Prosperity, 2009; Bloom, Dorgan, Dowdy, & Van Reenen, 2007; Camelo, Fernández, & Martínez, 2006; Carneiro, 2000; Giannopoulou, 2011; Catalin & Catalina, 2015).

In this context, business schools – educational establishments responsible to educate competent managers, must be viewed as important, if not critical, to innovation process. The most famous program at business schools – Master of Business Administration (MBA) has to become a kind of professional studies that encourages, nurtures and develops innovation potential. This will directly impact the innovation process in the workplace by means of MBA graduates' capacity to manage and articulate the process of innovation in their companies and enterprises.

1. INTRODUCTION

This PhD Thesis suggests a framework within which the yet unknown area of management education for innovation (MEI) can start to develop. The primary focus of attention is to put together the results of previous studies on business innovation and management education in order to identify the main features of MBA programs designed for innovation. Thereafter to review the teaching methodologies which help to increase the innovation potential and to propose a unique MBA course aiming to improve the innovation capacity of MBA students.

The literature review presented in the study first clarifies the concept of innovation and the role of management and management education in the innovation process. Then, the attention is paid to the current state of MBA education with particular focus on its positive and negative sides including the summary of the main points of the criticism business schools received in the last ten years. Further, the idea of management education for innovation is presented as means to overcome the current criticism and to make out of MBA programs a powerful force in bringing change to the economy and the society. The main literature in the area of management education for innovation is reviewed with the purpose of identifying the main features and characteristics of such education.

2 RESEARCH PROBLEM, QUESTIONS AND OBJECTIVES

Business schools must play an essential role in developing the managers who are able to create and recreate economic advantage through innovation. However, most business schools today do not directly incorporate innovation into their own unique missions and operations (Association to Advance Collegiate Schools of Business, [AACSB], 2010). One reason for this could be a limited research available on the subject. With some studies postulating the importance of MBA designed for innovation (Sullivan, 2011; Thorpe & Rawlinson, 2014), there are no studies which would explore the effectiveness of the teaching methods believed to enhance the innovation capacity in the students or propose a way of designing MBA courses for innovation and assessing the results. One way of doing so is through a pedagogical intervention: designing a course which incorporates the teaching methods believed to promote the innovation capacity, measuring the innovation capacity of the participating students before and after taking the course and assessing the learning results with respect to the innovation skills.

Therefore, the present research has the following main objective: *to improve the MBA students' innovation capacity by delivering a validated MBA study course methodologically adjusted to innovation.*

The research aims to answer the following questions: How can an MBA program be designed for innovation? Do the teaching methods which characterize management education for innovation improve students' innovation capacity and skills to a higher extent?

3 JUSTIFICATION OF THE IMPORTANCE OF THE RESEARCH

Nowadays innovation is seen as a key strategy for institutions and companies to thrive and sustain growth into the future (World Economic Forum, 2010; World Economic Forum, 2014). How to develop creativity, innovation and entrepreneurship for achieving more innovative and entrepreneurial societies is at the core of the current education agendas in the majority of countries around the world (Edwards, Garcia, Sanchez, Quesada, & Amara, 2015; OECD, 2011). Therefore, it is particularly important to insist on the study of those factors that relate positively to training and success in innovation.

Considering the role of management in the innovation process (Guo, Zhao, & Tang, 2013), business and management education should be viewed as one of these factors. However, recently business schools have come under intense criticism. The business schools' major educational innovation and "perhaps the most successful degree in history" (Starkey & Tempest, A clear sense of purpose? The evolving role of the business school, 2008, p. 380). Masters of Business Administration (MBA) – the most popular and widespread management graduate degree that originated in the United States in the late 19th century as the country industrialized and companies were looking for scientific approaches to management, stays in the center of attention of such criticism. MBA has been criticized for being unable to supply employers with the skilled and knowledgeable graduates they need (Cotton, McKenna, Van Auken, & Meuter, 2001; Louw, Bosch, & Venter, 2001; Pfeffer & Fong, 2002; (Davenport, Prusak, & Wilson, 2003; Mintzberg, 2004; Li-Hua & Lu, 2014). There are calls for a major restructuring of the contents of MBA programs to meet the requirements of the rapidly changing business environment (Treece, 2011).

Reconsideration of management education from the perspective of innovation can help overcome current criticism about the relevance of MBA programs and to bring their meaning for the practice of management to the new level. MBA programs designed for innovation can become a new powerful force in driving constructive change for society and economic development. Business schools have the capacity to create more stable foundation for the world and the commitment with innovation within them can enable such a transformation (AACSB, 2010).

3. JUSTIFICATION OF THE IMPORTANCE OF THE RESEARCH

Nevertheless, the number of studies in this area of research is still limited. According to Edwards et al. (2015), research about the competencies that can be taught and learnt to prepare students for innovation-oriented action is very scarce and with a poor theoretical background. Maritz et al. (2014) also state that while innovation education has been identified as a key contributor to enhancing the innovative behavior of individuals, there is still very little literature on development and assessment of innovation education programs. Therefore, there is an urgent need for research which can narrow this gap and help to solve the practical problem – how to educate managers ready to undertake the innovation challenge.

4 THEORETICAL FRAMEWORK

4.1 Innovation: Management and Management Education as Its Components

4.1.1 What is Innovation? Its Role in the Modern Economy

In the 1980's we witnessed the emergence of a remarkable phenomenon - the globalization. Globalization gave birth to a new economy, which according to Castells (1996), is informational, because its productivity depends on the capacity to generate information based on knowledge; global, because the production, consumption and circulation are interdependent on a global scale; organized and connected to one big network because the productivity and competencies are developed within the interactional network of businesses (p.111). This new reality brought the new growth theory that has become an omnipresent part of international businesses, politics and institutions of higher learning. The premise now is that postmodern economies, and increasingly developing economies, are growing on their dependence on knowledge accumulation and innovation. Promoting knowledge accumulation locally, via knowledge-based companies and entrepreneurial universities leads to technical innovation, new products, strong local economies and ultimately greater national and global competitiveness (Douglass, 2008).

The new growth theory became part of various governmental initiatives, such as the Lisbon Strategy of European Union, an action and development plan devised in 2000, for the economy of the European Union between 2000 and 2010. This strategy for economic growth and social cohesion stressed the potential of a society based on knowledge, scientific research, human resources and entrepreneurship (Council of the European Union, 2006). Across Europe, innovation is considered to be the most important driving factor behind sustainable economic development. The Lisbon strategy set the economic agenda for the European Union and aimed at closing the gap between Europe and its main global competitors, the US and Japan, thus making Europe the world's most competitive and dynamic economy through a knowledge-oriented strategy (Commission of the European Communities, 2000). When a new Europe 2020 strategy was launched, innovation was again within the seven flagship initiatives. The new smart growth strategy stresses developing an economy based on knowledge and innovation (European Commission, 2010).

4. THEORETICAL FRAMEWORK

Innovation has become key to improved global competitiveness for the following reason: globalization with its more liberal trade and financial markets has reduced geographic and other trade barriers – barriers that previously protected domestic industries from international competition. The new reality is that local firms must continually innovate, adapt and create new products and services to compete beyond regional borders (Archibugi, Howells, & Michie, 1999).

The ability to innovate has direct impact on the ability to compete at the individual, firm, regional and national level. The values created by innovations are often manifested in new ways of doing things or new products and processes that contribute to economic wealth. When a firm is considered as a collection of resources, skills and competencies, then the effect of innovation is to transform a firm's inner capabilities, making it more adaptive, productive, able to learn and to exploit new ideas. This improved flexibility is crucial in the face of changing market conditions. Thus innovation enhances competitiveness of companies (Neely & Hii, 1998; Carayannis & Grigoroudis, 2014; Fonseca & Lima, 2015).

Innovation, in the strict sense of the word, became a concept thanks to Joseph Schumpeter's work. Schumpeter (1934) realized that the existent analyses of how resources are distributed between different purposes were not enough to explain social change and economic development. Thus, he initially concluded that the innovation and technological change of a nation come from the entrepreneurs. While large companies tend to perfect their processes and use the economy of scales to grow, devoting very little attention to innovation – the driving force of economic development, the entrepreneurs, organize existing resources in different combinations to enable them to create new products or processes, or enter new markets, or find out a niche not noticed or occupied by large companies until then.

As result of this initial association, many studies on entrepreneurship have been linked to innovation. At present, the figure of the entrepreneur is described as either a mediator between an existing product and a new market; or someone who creates a product and exploits it in an existing market; or someone who creates a market that had not existed previously (Zahra, 2003). However, innovation is more than entrepreneurship, while being an important aspect of entrepreneurship (Sullivan, 2011).

4. THEORETICAL FRAMEWORK

Innovation can have very broad interpretations, but in almost every case, it involves some form of value creation. Innovation requires implementation, which moves an invention or inspired idea along to value creation to some positive impact. Thus, innovation success may involve value creation in terms of profits; or it may involve other metrics of value creation such as social benefit (Sullivan, 2011). However, innovation should not be equated to invention; an invention may not necessarily lead on to innovation. This distinction is made clear by Freeman (1982) when he noted that:

> An invention is an idea, a sketch or model for a new or improved device, product, process or system" whereas "an innovation in the economic sense is accomplished only with the first commercial transaction involving the new product, process, system or device. (p.7).

Innovation is crucial for productivity improvement. The innovating companies are not the only ones that benefit from their innovations. When innovations are diffused, they contribute to higher productivity and higher standards of living for an economy in general. Therefore diffusion of innovations positively impacts the well-being of the whole economy. Diffusion of innovation is favorable given that it helps disseminate new techniques, products and services to the wider economy thus allowing the full benefit to be gained (Castellani & Zanfei, 2006; Cassiman, Golovko, & Martínez-Ros, 2010; Hall, Lotti, & Mairesse, 2008).

Innovation can be classified into *product innovation* and *process innovation*. Product innovation refers to the new or improved product, equipment or service that is successful on the market. Process innovation involves the adoption of a new or improved manufacturing or distribution process, or a new method of social service. Further to product innovation and process innovation, there is *organizational innovation* (OECD & Eurostat, 2005). Organizational innovation can lead to more effective utilization of human resources that are crucial to the successful exploitation of ideas. Hence, innovations can occur in three broad dimensions – product, process and organizational.

The innovation process itself is more than the product of scientific or technological discovery. Recent analyses of the factors that characterize innovative enterprises have identified two key features.

First, innovation is a non-linear process, involving not just research activities but a complex combination of many related activities, such as training, design, finance, marketing and so on. Innovation relies on access to specialized competence in each of these areas, and successful innovation requires integration of all of these activities (Curtain, Vocational education and training, innovation and globalization, 2004).

Second, innovation comes from the interaction between firms and their external environments. Enterprises do not innovate alone, but do so by interacting with universities, technological institutes, consulting companies, suppliers and even competitors. This process of continuous interaction is what is called "open innovation" (Curtain, Vocational education and training, innovation and globalization, 2004).

Thus the challenge today consists in the ability to accept that different kind of organizations must evolve together in order to support the process of innovation. Companies must do more research, universities must understand their responsibility in certain realms and the authorities must bear the pressure on investments and more innovation-encouraging policies. Only by doing so and by understanding the role of each element in the innovation process it will be possible to achieve a high value-creating industry sectors exposed to global competition (Audretsch, 1998; Chaston & Scott, 2012; Janeiro, Proença, & Gonçalves, 2013).

4.1.2 The Role of Management in the Innovation Process

One of the knowledge fields of special importance to a country's stable economic development is that of management sciences. The role of management in economic development is recognized at institutional level, both governmental and academic. With innovation being considered as the primary source for increasing productivity and competiveness in the European Union, it is recognized that management issues represent the strongest barriers to innovation. The reason why such a big weight is attributed to management competences is based on the observation of a positive correlation between the prosperity of an economy and the role of firms operating in that economy (Ghoshal, Hahn, & Moran, 1999; Moran & Ghoshal, 1999; Metcalfe, Foster, & Ramlogan, 2005; Zhou, Sheng, & Shao, 2014).

Managerial competencies are crucial for big and small firms; however, in recent years the role of SMEs (small and medium-sized enterprises) for economic growth is

particularly underlined. The capacity of managers working for SMEs for developing and applying innovation in products, processes and organization is seen as a major driver in economic development (Gray & Allan, 2002; Lazear, 2004; Audretsch, Keilbach, & Lehmann, 2006; Beugelsdijk, 2007; Guo et al., 2013). SMEs play a decisive role in the competitiveness and dynamic of the European economy and EU public policies work in support of small businesses (European Commission).

It is recognized that abilities of entrepreneurs and managers predetermine the success of an enterprise and its capacity to innovate, compete and produce. In order to boost entrepreneurship, national governments of many countries should place management science in the heart of this process as a way to accumulate intellectual capital necessary for economic growth and elaborate on changing economic environment and incoming concerns (Bradley, 1997; Dogaru, 2012).

However, despite the recognition of the importance of management potential, some government policies, when addressing purely innovation issues, emphasize only the tangible technologies and heavily favor Research & Development incentives neglecting the development of intangible processes such as management techniques (Alexopoulos & Tombe, 2010). Governmental policies often tend to focus on scientific or technical innovation versus business innovation. Governments have shown this prioritization through granting tax credits for companies, providing direct funding for R&D projects in academic and corporate setting, and encouraging science and engineering training at post-secondary educational establishments. While these are certainly important productivity enhancing policies, the research conducted by Martin & Milway (2007) shows that policies aimed at improving management and developing new production processes may also lead to a significant improvement in productivity. To illustrate the potential importance of management, they consider the statistics on natural science and engineering graduates across the OECD countries. Even though the United States is the acknowledged leader in productivity growth and technological breakthroughs, the U.S. does not produce the most scientists and engineers per capita. This indicates that the explanation for cross-country productivity differences must be linked to other factors, such a social infrastructure, intangible technologies, and government policies.

Some reports have demonstrated that support for the demand for innovation comes from capable managers who understand the importance of innovation activities and pursue strategies based on innovative products and processes (e.g. "Management Matters" by Institute of Competitiveness and Prosperity of Canada, 2009; "Management Matters in New Zealand" by Ministry of Economic Development of New Zealand, 2010; "Management Matters in Australia: Just How Productive Are We?" by the Department of Innovation, Industry, Science and Research of Australian Government, 2009; "Management Practice and Productivity: Why They Matter" by Bloom et al. 2007; "Management Matters: Key Findings from the UKCES Surveys" by the UK Commission for Employment and Skills, 2013).

These reports show that strong management is important in each element of the innovation system. The management function includes goal setting, organization building, resource allocation, and monitoring of results. It also includes actions enterprise finance, sales and promotion, production and delivery, and people development. Management skills are important enablers that support the supply of innovation and are crucial for organizing R&D efforts, for setting priorities, developing strategies, and acquiring resources. Hence, in building an innovative enterprise or an innovative economy, management talent matters. Capable management can develop strategies for which innovation is a critical component. Management skills are an important complement to science and engineering skills in creating a high quality supply of innovation, driving sophisticated demand for innovation, and taking appropriate financing decisions in order to make the innovation system work effectively.

However, the research conducted within successful innovative firms in Canada, for example, shows that these firms report disadvantages in management as a key constraint (The Strategic Counsel, 2004). The research found that one of the most significant challenges they faced in their development was in gaining access to managerial talent to hire. Importantly, this challenge was perceived to be a significant disadvantage for them against their most important competitors in other countries. The results of this research indicate that a key part of the problem to boost innovation and economic development is attributable to the lack of skilled managers.

Therefore, it is particularly important to insist on the study of those factors that relate positively to the training of professional and capable managers. Management education is one of these factors and a key requirement for those performing managerial roles now and into the future (Institute for Competitiveness and Prosperity, 2009).

4.1.3 Management Education as Means to Bring Up Competent Managers

An important opportunity for improving innovation and productivity performance is in strengthening management talent in the economy. The business leaders make many of the investment and policy decisions that drive economic growth and development (Porter, Sachs, & McArthur, 2001). In fact, some academic studies argue that the role of managers in national economic development is more significant than the one of the government economists who prepare fiscal policies and budget strategies (Heller, 1968).

Inability to train capable managers is often seen as the biggest failure causing bleak economic future. Thus, the development of effective management education is considered one of the requirements for achieving economic stability (Safavi, 1981; Gupta & Bennett, 2014). It is not surprising that about 1000 business and management schools opened in Eastern Europe in the first decade after the collapse of Communist rule and graduates were in high demand by multinational companies looking to expand to the post-communist space (Bollag, 1997). Thus, management education built on management science progress and development has proved to be the only unfailing means to bring up the future competent entrepreneurs and business managers.

The growth in management education generally, and entrepreneurship education specifically, has occurred at the time when increasing importance is attached to management both as an activity for academic investigation and as a practical activity in both public and private sectors. The need for management education is seen in the statistics: in the US the number of colleges and universities that offer courses related to entrepreneurship grew from a handful in the 1970s to over 1,600 in 2005 (Kuratko, 2005). Although the American contribution to business education is well-known, non-US style management education has also earned a place of honor with studies confirming that European management education model is capable to promote solid economic growth (e.g. Locke, 1985; Kwok & Arpan, 1994).

4. THEORETICAL FRAMEWORK

With increasing importance of management education around the world and the rapidly changing economic environment, there are more challenges for management educators. Globalization started to require from the graduating students more than small and medium-sized enterprise management skills – it required creativity and the ability to satisfy the need of the economy based on innovation, as well as the ability to be competent and efficient managers (Jack & Anderson, 1999). Consequently, management educators faced the need to develop careful strategies that consider the drivers of change such as globalization, new technologies and demographic shifts (Friga, Bettis, & Sullivan, 2003) and the need to constantly look for the ways of improving management studies curriculum with the purpose of delivering greater benefits to society while concurrently promoting the interests of business (Emiliani, 2004).

Unfortunately, the progress of aligning management education to the current needs of knowledge and innovation-driven economy is not so fast. Thus, it is observed that in some countries underperformance in innovation and productivity is driven by underdeveloped management capabilities – lower educational attainment and less diffusion of best management practices. When compared to the U.S. Canadian managers are seen to have significantly lower educational attainment than their U.S. colleagues, and CEOs of the largest corporations are less likely to have formal business education at the graduate level (Institute for Competitiveness and Prosperity, 2009).

Because of the recognized importance of managerial capabilities for the economic development, the study conducted by Bloom et al. (2007) concludes that governments can play their part in encouraging the take-up of good management practices but, most importantly, the study states that doing so may be the single most cost-effective way of improving the performance of their economies.

Clearly, investing in management education and skills is a key requirement nowadays. Governments worldwide have a role not only in funding and guiding education systems, but also in the development of specific programs to develop management capability. Such programs must be accompanied by a fair, flexible and balanced system of labor market regulation (Department of Innovation, Industry, Science and Research of Australian Government, 2009). Some governments have already started transmitting such attitude to national policies. Thus, the Australian

government acknowledges its commitment to "improve innovation, skills and workplace capabilities, including management and leadership skills - building on Enterprise Connect and the Education Revolution" (Commonwealth of Australia, 2009, p. 7).

Business schools should be aware of such policies and of the fact that management and leadership nowadays are important as never before. They should help to create the talent pool that is essential for innovation and understand their role in innovation and economic prosperity (Sullivan, 2011).

Successful economic development is the process of successive upgrading, in which businesses and their supporting environments co-evolve to foster increasingly sophisticated ways of competing and producing. Management and business educational institutions represent these supporting environments, which by being the vehicles for knowledge flows, spur economic growth (Mueller, 2006). The way in which firms and organizations are managed as well as the representation that managers have of their own responsibility in the contribution to the economic progress is a key.

Previous research indicates that management is a critical function and the main enabler of innovation. The function of management today must be open to innovation and adaption as the organizations, environments and opportunities change. Consequently, the education of future managers must involve a complex interplay of critical thinking, creative thinking, risk management, organizational culture, communication and much more (Sullivan, 2011). Business schools must assess their contribution to innovation in ways that are responsive to the current needs of the economy and of the society in general.

In the next chapter of this work, the two sides of the most famous business degree, Master of Business Administration (MBA), are discussed in order to assess the current state of management education in order to further evaluate how the engagement with innovation at business schools can change the situation.

4.2 The Two Sides of the MBA: Pros and Cons

4.2.1 MBA as a Key Program in Management Education

4.2.1.1 What is the MBA?

The Master of Business Administration (MBA) is a master's degree in business administration, which attracts people from a wide range of academic disciplines. The business schools' major educational innovation and "perhaps the most successful degree in history" (Starkey & Tempest, 2009, p. 380), MBA is the most popular and widespread management graduate degree that originated in the United States in the late 19th century as the country industrialized and companies were looking for scientific approaches to management. Since then MBA won rapid acceptance and spread quickly not only in the U.S. but in Europe and around the world (The MBA - Some History, 2003).

The core courses in the MBA program are designed to introduce students to the various areas of business such as accounting, finance, marketing, human resources, operations management, etc. Full-time MBA programs normally take place over two academic years (i.e. approximately 18 months), although there are programs which last from nine to fifteen months and are usually offered at European business schools.

Apart from full-time MBA programs, there are executive MBA (EMBA) programs developed to meet the educational needs of managers and executives, allowing students to earn an MBA in two years or less while working full-time. Participants of such programs come from every type and size of organization – profit, nonprofit, government – representing a variety of industries. EMBA students typically have a higher level of work experience compared to other MBA students.

The privileged position of the MBA in the market of academic programs in management education can be seen in the rapid and steady increase in the number of students undertaking it yearly. In the U.S., Master degree in Business Administration was awarded to 55.008 graduates in 1980 and to 168.375 graduates in 2009, which represents 25,6% of total Master degrees earned in the U.S. in 2009 (The 2012 Statistical Abstract, 2012). Despite difficult economic situation around the world, 77% of full-time MBA programs reported that they received more applications in 2009 than

in 2008, on average an increase of 10%, the largest proportion in the past five years and second largest proportion since the inception of the GMAC Application Trends Survey in 2000. The number of potential students undertaking the Graduate Management Admission Test (GMAT) also increased: the number of GMAT tests taken from July 2007 to July 2008 increased by 12% and from 2006 till 2010 this number increased by 9.1% in the U.S., and by 6% outside the U.S., which meant an increase of 7.8% worldwide (Graduate Management Admission Council [GMAC], 2010).

Taking into consideration the latest GMAC Application Trends Survey, the tendency of the increased popularity of the MBA is still on track: among full-time two-year MBA programs, more than half (57%) of programs reported increased application volume overall in 2015. In addition, 60% of full-time two-year MBA programs reported receiving more applications this year when compared with 10 years ago (GMAC, 2015).

4.2.1.2 The MBA and Managerial Abilities

The MBA has been considered as one of the most relevant academic programs in the world (e.g. Schmotter, 1993). As it has been discussed above, in order to flourish in competitive global markets, nations and countries need good managers. Nations put special emphasis on education and MBA is the most notable advanced qualification in the management profession. Well-directed MBA programs can improve managerial competences in terms of innovation, flexibility and other managerial qualities needed for the contemporary business environment (Baruch, To MBA or not to MBA, 2009). The success of MBA graduates as entrepreneurs is another incentive for countries to promote MBA studies (Bygrave, 1994).

Academic research has indicated that attending an MBA adds value on a number of abilities related to effective managerial performance (e.g. Boyatzis & Renio Case, 1993; Mihail & Elefterie, 2006; Baruch, 2009). Boyatzis and Renio Case (1993) show that an MBA program has a significant positive effect on graduates' managerial competencies in areas of information analysis, quantitative analysis, and implementation of projects. Kretovics (1999) measures the learning outcomes of an MBA program. He finds that MBA studies enhance 12 skills related to business among graduates as compared to entering students. The program is most effective on "hard" managerial skills such as goal setting, information gathering, quantitative analysis,

theory application, technology application but also important for building interpersonal skills such as help skills and ability to inspire and motivate others. A study by Sturges, Simpson, and Altman (2003) involves a broader examination of MBA career success and highlights that the MBA helps to develop "knowing-why", "knowing-how" and "knowing-whom" competencies, illustrating a variety of ways in which the MBA facilitates managerial success. The findings by Hay (2006) suggest that the MBA is seen to add value to management practice in terms of seeing differently, in respect of self, others and organization. Moreover, MBA graduates gain higher levels of self-esteem and self-efficiency in handling managerial processes.

Additionally, MBA effect on management skills and career is proved by the researches from all over the world. Ayesha, Babak, Aroosa, and Sumaira (2011) studied the case of Pakistan and demonstrated that MBA degree has positive effect on career advancement because it sharpens different skills and provides a basis for better opportunities by developing in MBA graduates diversified skills which help them to act as worthy managers. Similarly, Mihail and Kloutsiniotis (2014) studied the case of Greece and indicate that an MBA contributes to most of the managerial skills and helps graduates to find enriched jobs with increasing compensation over time.

Such results may also be derived from the fact that, apart from practical knowledge about business in general, MBA programs play a crucial role in developing leadership and decision-making abilities within its graduates. Gosling (2004) argues that leadership development within management education should develop the character, integrity, skills and discursive intelligence necessary for the responsible exercise of power. In fact, leadership and decision-making studies as part of management education have been of great interest among academic researchers (e.g. Gabriel, 2005). This study demonstrates that business schools should constantly review their leadership and decision-making curricula as these skills represent the essential ones for modern business leaders.

4.2.1.3 The Impact of the MBA on Graduates' Professional Career

The relevance of MBA is also attributed to the impact that pursuing this program has shown on its graduates' career. MBA degree leads to fast track career success, constructed in terms of improved salary and hierarchical position (Baruch & Peiperl,

2000; Carnall, 1992). This can be measured by the qualitative (type of position – increased responsibilities) and quantitative (earnings – increased salaries) improvement of the graduates' positions after finishing the MBA studies. Mihail and Elefterie's (2006) study demonstrates that the MBA degree contributes decisively to finding a new job with better employment conditions after graduation. The study makes it evident that MBA graduates are able not only to find a new job but to successfully negotiate with employers more promising employment conditions. Their findings also indicate that completing an MBA degree contributes significantly to pay raises after graduation. Camuffo, Gerli, Borgo, and Somia (2009) also explore how the amount and the nature of learning accrued during an MBA – measured in terms of competency development – influence career advancement and compensation. Their findings support the hypothesis that the degree of competency development during the MBA program enhances career advancement. Baruch (2009) provides evidence that employing a manager with an MBA qualification serves organizations well, at the same time as employers benefit from better skills and managerial capacities, MBA graduates expect an appropriate recognition (remuneration). Gupta and Bennett (2014) provide evidence that MBA graduates make a significant contribution towards improving the organization employing them.

Statistical reports prove academic findings and conclusions regarding MBA graduates' career success. Thus, GMAC Alumni Perspective Survey 2015 states that the vast majority of graduates from the class of 2014 worldwide (96%) were employed at the time of the survey, either working for an employer (84%) or self-employed (12%). 90% of alumni say their graduate management education increased their earnings power; 79% believe their salary is competitive by industry standards; and 75% say they are paid fairly for the work they do (GMAC, 2015).

Even though Sinclair and Hintz (1991) believe that MBA students are solely concerned with status and salary, other studies have stated that MBA career success is broader than that. Hay and Hodgkinson (2006) suggest a more complex picture of the MBA in relation to the career than is ordinarily assumed. They argue that the reasons managers give for pursuing the MBA degree are more diverse than a focus on career promotion and salary. Whist this is important for some, motivations such as knowledge and development, personal challenge and enhanced employability are more frequently

emphasized. With these findings in mind, it is widely accepted that MBA serves not only the purposes of greater employability and better salaries for the majority of people undertaking the program, but represents a great chance for personal improvement and self-realization (LeBlanc and Nguyen, 1999; Baruch and Leeming, 2001).

4.2.2 The MBA Criticism

Higher education is facing unprecedented challenges under the impact of globalization, knowledge-based economic growth, as well as the information and communication revolution. These spontaneous changes in the environment are stretching the traditional boundaries of higher education. The time dimension is altered by the requirement for lifelong learning while new technologies are doing away with space barriers altogether. These emerging challenges can be seen equally as terrible threats or tremendous opportunities for the institutions of higher education; depending on how they will be approached.

Despite the MBA success in the past, business schools, one of the areas of greatest growth in universities over the past 50 years, are not isolated from the pressures for change affecting universities in general as a result of globalization. Given the relationship between management education and business world, market forces such as globalization, technological change and new workplace requirements affect business education more than any other branch of academia.

Business environment is becoming everyday more global and complex, making management today a lot more complicated than in the past. Companies are no longer protected by borders or able to easily take advantage of information asymmetries around the world to earn abnormal returns. In this context, there is a need for more sophisticated management, for new ideas and for faster rates of innovation, and thus a need for leading business schools to invest in research in order to better understand these issues and come up with rigorous and relevant solutions and suggestions (Hawawini, 2005).

However, business schools have been slow to respond to these new challenges. Warnings regarding the nature of business education and its relevance to the profession of management appeared in the beginning of the 21st century. All started with the famous paper “The End of Business Schools? Less Success than Meets the Eye”

(Pfeffer & Fong, 2004). These authors suggested that out of a desire to achieve respectability and legitimacy, business schools adopted the ways of social science departments. As a result, research and teaching has moved away from practical relevance. The same authors two years later concluded that business schools faced a number of problems, many of them as a consequence of offering a value proposition that primarily emphasized the career-enhancing, salary increasing aspects of business education (Pfeffer & Fong, 2004).

Many other similar research studies followed: Mintzberg (2004) argues that MBA programs simply provide specialized training in functions of business and are unable to contribute to the broader practice of management; Bennis and O'Toole (2005) criticize business schools for treating management as science rather than a profession and for hiring and rewarding faculty based on research records and not managerial experience; Corley and Gioia (2000) argue that nowadays business schools are involved more with "the rankings game" and image and reputation management rather than learning outcomes of their students. Starkey and Tempest (2008) question the purpose of the business school and its role in management education and argue for a new narrative of sustainable strategic management as a guiding force for future development of business schools. Li-Hua and Lu (2014) claim that MBA is perceived as a Western product, and while being widely accepted by business leaders across the world as a way to gain competitiveness in the global market, MBA will fail without a global vision and international contents with a wider perspective. They argue that a traditional MBA with traditional Western contents needs to be re-designed in order to train graduates who can become full-fledged global competitors.

Below these and other main reasons for MBA criticism are discussed with the purpose of summarizing the main arguments and in order to come up with another look at the future of business schools and particularly MBA as the most popular program in management education. A look which would enhance the value of MBA training in ways that are responsive to the criticism and concerns of the employers and the society in general.

4.2.2.1 MBA and It's Relevance to the Practice of Management

Despite the increase in the number of MBA applications, the debate regarding its relevance to the practice of management continues to gain in strength. While students hope to increase their career prospects by means of management education, employers are losing faith in business graduates. In the past, deans at business schools had a ready response to questions about the value of business education: business training was a way of getting better employment opportunities. Nowadays, top executives at many companies see MBA degree as "not needed" (Datar, Garvin, & Cullen, 2010, p. 34). In fact, it has been found that middle managers with MBA degree scored equally to those with other masters' degrees when evaluating managerial skills (Shipper, 1999). Before an MBA degree was seen as a way to accelerate the career, but nowadays firms are actively discouraging their best young people from leaving lower-level positions for business school, arguing that their chances for success are better if they stay at the firm (Datar et al., 2010).

There has been much criticism of the ability of business schools to satisfy either the demands of academia or of the world of business. The two seek different characteristics in the curriculum: the academy is looking for those that will groom future scientists and the profession is demanding immediately employable professionals (Cotton, McKenna, Van Auken, & Meuter, 2001). It has been noticed that academics and profession are moving further apart from each other (e.g. Anderson, Herriot, & Hodgkinson, 2001) and that the output of management research does not consider the implications for the practice of management (Tranfield & Starkey, 1998). Davenport et al. (2003) suggest that there is limited transmission of new ideas for management from business schools. So, while the output of management research may be aligned toward disciplinary knowledge, practice, pedagogy, or a combination of these, the impact on management practice generally is neither fully understood nor clear. Because business schools are increasingly modeled on academic disciplines, business schools' research is seen as having only limited impact on managers and the problems they face. Whether it is best-selling business books or influential management ideas, the authors are consultants or managers, not business school faculty. A look at the world's fifty most important management innovations concluded that none of the fifty had its origins in academic research or scholarship (Pfeffer & Fong, 2004). Many studies portray the

content that is delivered by research-oriented faculty as irrelevant for the profession of management (e.g. Pfeffer & Fong, 2002; Starkey, Hatchuel, & Tempest, 2004).

This controversy and search for balance between academics and practitioners has been one of the sources of constant debate regarding the relevance of MBA degree. Thus, Louw et al. (2001) aim to establish whether the MBA curricula are relevant to the current and future needs of business practice in a dynamic business environment. For this purpose, the opinions of MBA graduates and employers regarding the MBA curriculum are compared. The findings indicate that core MBA courses are ranked very similarly by the graduates and employers, although employers' ratings were generally higher. Both the MBA graduates and employers allocated high importance ratings to leadership, creative thinking and initiative, analytical and holistic thinking and problem-solving, as well as the ability to convey a strong sense of vision – all critical elements of transformational leadership. In addition to the above-mentioned skills and traits, the employer respondents also allocated high relative importance ratings to decision-making skills, pro-activity, the ability to accept responsibility, accountability, and business ethics and integrity.

Another similar study observes the relevance of graduate management education according to identified essential managerial competencies (Rubin & Dierdorff, 2009). The authors take as a basis the comprehensive managerial competency model using the data from 8.633 professionals across 52 managerial occupations. The model summarizes the competencies which managers considered as important by making an assumption that required curricula should represent an institution's best attempt to capture the most essential content relevant to managerial work. The study explored whether highly ranked MBA programs were more likely to offer relevant curricula and found out that professional managers placed the highest importance to managerial decision making and managerial human capital whereas these competencies were ranked 4th and 5th in terms of required MBA curricula. The conclusion made consists in the fact that in order for MBA to be relevant, managers should build a model of competencies needed for the profession, so that management becomes a profession like law, for example, and based on these competencies business schools have to adapt their curriculum in accordance with what managers need. This view is shared by Abraham

and Karns (2009) and Elliot and Glaser (1998) who believe that business schools should do more to align their curricula with the desires of businesses.

Hoover, Giambatista, Sorenson, and Bommer (2010) also identify the attributes and skills desired by companies that hire MBA graduates, which are: communication and interpersonal skills, ability to work well within a team, and analytical and problem solving skills. However this study also argues that many MBA graduates possess the cognitive skills needed to enter the workplace, but may lack the ability to demonstrate on demand a total set of learned behaviors. Thus, a whole person learning experiential/behavioral skills pedagogy which contains experiential learning elements is needed to acquire the essential managerial skills.

Baruch and Leeming (2001) evaluate the set of skills and competencies deemed necessary for business life and expected to be developed or improved by MBA studies. They based their research on the perception of MBA graduates by asking them to evaluate their competencies in these skills. The respondents were asked to rate to which extent the MBA program had contributed to their personal development in these competencies. The skills included, among others, time management, team leadership, negotiations skills, and oral presentations. The responses indicated there was some discrepancy between the contribution achieved during the studies and the needs found in business life. The perceived need for these skills was high, whereas the contribution attributed to MBA varied from moderate to good.

Fernandes and Wood (2015) investigate how recently graduated professionals and current MBA students perceive the objective and subjective effects of these programs on their careers. The findings indicate that the participants perceived subjective effects significantly more frequently than objective effects of attending an MBA. Thus, the authors suggest that business schools should re-balance the attention among objective and subjective effects in order to improve the MBA programs. For example, it is important to provide opportunities for students to apply what they learnt in the classroom by fostering partnerships with companies and becoming closer to the real practice of management.

According to Hawawini (2005) the reason for such discrepancy between MBA and the practice of management lies in the fact that business schools do not seem to

have evolved that much with the emergence of the knowledge society and global business. Business schools have been around for over a century and still operate today under the same basic model as they did 100 years ago. Hawawini (2005) argues that educational process at a business school still can be linked to a production-based model – supplying business graduates to an industry – but as the forces of globalization and communication and information technologies converge business schools will have to change and the production-based model will have to evolve into one where the school becomes a knowledge and learning network. People will be able to join a network for lifelong learning and contact building.

To predict the future of MBA and management education, Thomas, Lee, and Wilson (2014a) asked the panel of experts for their opinion on what they think would be the best and the worst scenario for business schools. The best case scenario was one where schools move closer to the practice in order to regain relevance; and the worst-case scenario was a situation where business schools fail to respond to criticism and challenges which leads them to greater and greater irrelevance. Thomas, Lee, Thomas, and Wilson (2014b) state that there is a clear requirement to improve research impact and relevance and therefore become relevant to management practice (the need for experimentation and deep collaboration with practice).

4.2.2.2 Prevalence of the Hard Skills over Soft Skills in the MBA Curriculum

Another area of debate focuses on the prevalence of the so-called "hard skills" over "soft skills" in the MBA curriculum. Even though this debate is not new and the first soft skills-oriented courses, such as leadership, appeared in the MBA curriculum in 1985, many business schools are stills remaining locked in the traditional "hard" teaching areas such as finance, marketing, and production (Daniel, 1998). Daniel observes the history of MBA and notes that in 1989 the Council for Management Education and Development in the United Kingdom identified the competencies a manager should be able to demonstrate and produced a list of nine "areas of knowledge and skills". These were: identification of the management task, personal skills, effective management, information management, environment of the manager, managing people, managing resources, client/customer relations, and personal effectiveness. For the first time in the history of MBA the recommendations did not include mostly technical, hard skills. Since that time, a lot has been done to restructure the MBA curriculum and to

include more soft skills, such as the ability to work with others, to communicate effectively, to display multicultural awareness, and to exhibit some entrepreneurial and leadership competencies instead of solely imparting a large dose of quantitative management skills and techniques as it was before (Hawawini, 2005).

However, many studies still state that business schools should continue working in this direction when adjusting their curriculum to current market needs and in order to train future successful managers (Rubin and Dierdorff, 2009; Abraham and Karns, 2009; Louw et al., 2001; Warhurst, 2011). These and other authors argue that many MBA courses still emphasize analytical framework and quantitative techniques, not softer, hard-to-measure organizational skills. This approach has an advantage of teaching students how to dissect and solve complex problems, such as valuing a potential acquisition or positioning a new product, but it teaches students primarily analysis and not action. The hard skills teach students to attack problems and not to implement solutions (Datar et al., 2010). To assess the current state of MBA curriculum, Navarro (2008) determines how well business schools conform to the proposed ideal MBA curriculum. The author identifies six features of the ideal MBA curriculum which are multidisciplinary integration, experiential learning, soft skills, a global perspective, information technology, and ethics and corporate social responsibility. In answering the question of how many of today's top ranked MBA programs exhibit one or more of these ideal curriculum features, the author analyses curriculums of 50 MBA programs from three most popular MBA rankings. He finds out that most of the top-ranked MBA programs are hard skills oriented and do not pay enough attention to soft skills, ethics and corporate social responsibility and global issues. Boyatzis, Stubbs, and Taylor (2002) argue that competencies that have been shown to cause or predict outstanding manager or leader performance are soft skills which are cognitive or intellectual ability, self-management or interpersonal abilities and relationship management and that these competencies are still seen at business schools as the responsibility of the career placement offices and not faculty. The authors suggest that an MBA education can help people develop cognitive and emotional intelligence competencies needed to be outstanding managers and leaders, but business schools cannot use the typical lecture and discussion methods with their focus on knowledge acquisition only in order to develop these competencies.

Khurana and Spender (2013) ask "What skills do MBA students really need?" hoping to influence the balance between hard skills and more practical soft skills in the management education curricula. Fernandes and Wood (2015) question whether MBA programs should include specific subjects that develop soft skills or whether they could be developed through peer interaction, group dynamics or other relational activities within programs rather than considered separately as specific subjects. This question consists in the fact that acquiring technical knowledge combined with hands-on application of this knowledge improves professional performance, which in turn helps boost an individual's image with peers and managers. This opens a new debate with respect to the balance between soft and hard skills within the MBA curriculum, but the issue is still there.

4.2.2.3 Lack of Entrepreneurship and Leadership Training during the MBA

The importance of developing entrepreneurial competency has been underlined not only in the area of business education, but as an essential competency for the 21st century (Marina, 2010). More so it is important for business graduates who have received special training on enterprise creation and are expected to contribute to the entrepreneurship development in their respective countries (Bygrave, 1994). It has been noted that given today's economic and social realities, the millennial generation does not have the security of holding a job for life. Students will need to develop their entrepreneurial and leadership skills to prepare them for business opportunities. However, teaching entrepreneurship and leadership competencies in a broader sense, which goes beyond knowing how to write a business plan, is an area that only few business schools have focused on (Global Foundation for Management Education, 2010).

Despite the importance of entrepreneurship in the MBA curriculum, this area of study could not avoid criticism either. It has been said that business schools are designed to train administrators and not entrepreneurs. Business schools produce relatively large numbers of specialists in fields such as marketing, finance, accounting, but few general managers, and even fewer who can tolerate ambiguity, and who understand the importance of creativity, intuition, and judgment – characteristics of successful entrepreneurs (Chusimir, 1998). Chia (1996) argues that the cultivation of the entrepreneurial imagination is the most important contribution business schools can

make to the business community. Instead of trying to make business education more relevant, business schools should adopt a deliberate process of educational strategy that privileges the "weakening" of thought processes so as to encourage and stimulate the entrepreneurial imagination. Nagendra, Dobal, Ghildiyal, Gupta, and Gurung (2014) research what the successful entrepreneurs think about the relationship between an MBA degree and success of an entrepreneurial venture. Their findings indicate that that the entrepreneurs believed that an education such as MBA is not a necessity for starting a business.

However, any entrepreneurial initiative needs leadership skills and MBA curriculum, as it has been observed, is not typically designed to provide participants with a broader understanding of leadership (Garcia, 2009). Gabriel (2005) assesses whether it is possible to teach a leadership course in which the students do not assume the role of followers, but rather find themselves leading others, taking responsibilities and operating without the conventional safety provided by the lecturer. The author concludes that the structure and ideology of MBA programs are fundamentally opposed to an education of leaders, arguing that MBA experience is one for educating followers rather than leaders.

Garcia (2009) proposes a framework for developing a leadership criticality in MBA students that consists in engaging MBA participants to operate beyond short term and narrow commercial and financial issues by assuring that educators expose them to criticality in the three domains of knowing (leadership reason), the self (leadership self-reflection) and the world (leadership action).

Atwater, Kannan, and Stephens (2008) aim to answer the question: "How should a graduate business curriculum be designed to prepare business leaders to be successful in the 21st century?" The authors suggest that the MBA curriculum must help students to develop systemic thinking skills that will enable them to develop a richer understanding of the complexity they will face on a daily basis. Despite the growing support that systemic thinking is a necessary skill for managers and that they need training to develop that skill, what role business schools are playing in facilitating this task is unclear. The results demonstrate that 60,3% of MBA faculty do not know what systemic thinking is.

Gosling (2004) argues that in order to develop leadership competencies, MBA programs need a course design that would emphasize the discursive and relational process of leading. In such a course, participants should be practicing managers with current leadership responsibilities that oblige them to be realistic about suggestions for action; they should approach the subject of leadership in ways which encourage fresh thinking and which are open to emotional and ethical content – which means working in various mindsets, instead of through the traditional business functions.

Leadership skills also emerge as vital and something that business school should be paying attention to in the study conducted by Thomas et al. (2014b). The experts they interviewed believe that nowadays "management education needs to be developing leaders more than managers" (p.68).

Based on these results, it is obvious, that the very credibility of business schools' handling of entrepreneurial and leadership education is now in question. Alternative forms of leadership education are taking root and most likely will be well established in the nearest future as a response to the recent criticism of business education.

4.2.2.4 MBA as Cash Flow for the Business Schools: "Rankings Game"

Another area of preoccupation is internationalization and commercialization of business schools. Management education is growing rapidly and now represents a commodity which is highly commercialized. MBA has become the stamp of approval for hundreds of thousands of managers and big business for universities. Western universities compete in emerging markets for lucrative local opportunities and foreign students (or consumers). Sturdy and Gabriel (2000) see this process of diffusion of Western management ideas as consumption pattern with which the foreign students treat the MBA as a standardized commodity (much like the foreign car) with particular use, symbolic and exchange values. This point of view is shared by Bennington and Lai Xu (2001) who found out that only 1,8% of students on the offshore Australian MBA program in China recommended the completion of an MBA totally onshore (local school and studying only in one native country).

One of the most important factors that points towards the MBA as being one of the key programs in any business school's portfolio is priority resource allocation to the MBA. Business schools are trying to compete with each other by offering tailored

programs and superior facilities in order to attract prospective students. As MBA by nature is a core business of business schools, they put it in the heart of their operations by providing it with the highest budget in comparison with other programs. For example, business schools are setting up new campuses in other continents and develop online technologies to meet the distant and wide-ranging demand for their MBA programs and to provide their students with a globalized experience (Onzono & Carmona, 2007). Thomas et al. (2014b) observe that the increasing pressures of competition resulted in the fact that business schools only rarely co-operate, or collaborate, on joint programs or research projects nor do they share information between each other.

Unfortunately, very often the financial resources assigned to an MBA program do not correlate with its educational quality. As a result of the appearance of a proliferated market of business education, the prestige of business schools is now assessed by a number of media such as the Economist Intelligence Unit, Business Weekly, and Financial Times, which compose MBA rankings. Consequently, marketing techniques that business schools utilize have also become more sophisticated. MBA schools fight for each extra point to increase their position in the rankings and use their ranking success in advertising in order to attract new students (Naudé, Henneberg, & Jiang, 2010). Brochures, company sponsorships and endorsements by the top companies are now an integral part of marketing campaigns. Such attributes as rankings and listings have nowadays become the determinants of the market success of a business school and much attention is paid to the fact whether this new reality brings value to the business education and whether the market prestige of one particular MBA program is a real reflector of its quality. As one of the experts interviewed by Thomas et al. (2014b) states: “It is the emergence of the rankings that has influenced heavily the way a lot of business schools think about their strategy” (p. 72).

The first rankings in higher education appeared in 1870 (Webster, 1986) and the first ranking of business schools was published in 1977 in the *MBA Magazine*, however it was very simplified in comparison with modern rankings as it only measured research output and surveyed the faculty´s opinion about which schools they believed were the best (Schatz, 1993). The rankings as we know them now that include several characteristics of business schools, such as graduates’ salary before and after

completing the program, immerged less than 20 years ago (Policano, 2007) and, considering the way in which they reshaped the business schools' industry, attracted much attention from the scholars who never shared a single opinion on the subject. For example, Corley and Gioia (2000) see published rankings of business schools as a competitive game with unspecified rules. High attention on the game and the resources devoted to it, pull the participants even further into playing it.

"The rankings game" as Corley and Gioia (2000) call it, makes it unclear whether image management is an appropriate activity for business schools and whether modern business schools can survive without image management. According to several studies, the introduction of rankings as a tool to quantify academic performance had an opposite effect with real outcomes not being as important as image and reputation (e.g. De Angelo, De Angelo & Zimmerman, 2005; Trank & Rynes, 2003). Trank and Rynes believe that a variety of pressures (e.g. rankings) on business schools are rapidly driving them towards "deprofessionalization" – a process which can have fatal consequences if it is not stopped now and which can make business education irrelevant. De Angelo et al. (2005) share a similar opinion: they argue that rankings have a seriously adverse effect on business schools and that while business schools search for ways to improve their ranking positions, they simplify their MBA programs by making them easier and forget about their undergraduate and PhD programs as all the resources go in favor of MBA. Overall, all of the mentioned authors believe that "rankings game" is very expensive to play because business schools spend significant sums of money on marketing that otherwise would not be necessary.

A growing body of scholarship on educational rankings concentrates on the correlations between ranking and the actual quality of the programs offered (e.g. Scott, 2007; Proudlove, 2012). The conclusions that dominate this area of research state that the position in the ranking is not always a direct reflector of quality. Graham and Diamond (1997) argue that ratings based on reputation reflect yesterday's reality and understate the quality of some universities while overstating others. Paxton and Kenneth (2003) analyze rankings in three related disciplines – sociology, political science, and economics. The authors argue that ideally rankings should reflect the perceived quality of the department. However, their results showed that 20% to 30% of the variation in ratings derives from systematic error. Policano (2007) argues that one effect of rankings

has been to influence prospective students to place more importance on variables such as perceived prestige rather than on variables such as quality and relevance of MBA curriculum. As a result, there are potentially harmful impacts of the rankings because applicants believe that there are more differences than actually exist between schools ranked within ten or five places of one another and because business schools spend significant resources when trying to close the gaps in rankings. As other authors, he believes that this expenditure does little to improve the overall MBA program quality.

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The studies outlined above show that the importance of an MBA cannot be understated. It is the world's most popular business qualification, designed to provide students with the understanding of major business functions. A well-designed MBA program can develop managerial capabilities that take years to gain in the workplace. If companies were left on their own to develop these capabilities, the business world would see some that excel but many others would lag behind. Several studies have demonstrated that without MBA graduates, the global and national economy would be a lot less vibrant, and there would be much more variance across companies on various performance measures (e.g. Safavi, 1981; Puig & Fernández, 2003).

Over its history MBA degree has undergone important attacks and changes: for example, initially, when graduate management education appeared in the beginning of the 20th century, it was not successful and one of the most famous business schools today, Stanford Business School, was fighting to avoid bankruptcy (Gleeson, Schlossman, & Allen, 1993; Gleeson, 1997). Later, in the 1950s graduate business schools were condemned as little more than vocational colleges filled with second-rate students taught by second-rate professors who did not understand their fields, did little research and were out of touch with business (Daniel, 1998). However, business schools always responded rapidly, raising both their admission and teaching standards.

Now, in the 21st century, there are signs that the MBA is undergoing change yet again. Despite, or perhaps because of, the steady growth and apparent economic prosperity of business schools and MBA programs, such programs are being met with escalating criticism regarding the capabilities they claim to impart.

4.2.3 Engagement with Innovation as a Way to Overcome MBA Criticism

The MBA criticism has caused dislocations and continuous adjustments for business schools worldwide. Nevertheless, it creates a new test for making wise decisions and determining how to move forward. Every business school has a range of resources and options and can consider how its long-term development and circumstances can allow it to overcome today's temporary difficulties. Business schools willing to take advantages of the new opportunities cannot afford to remain passive, but must be proactive in launching meaningful reforms and innovations (AACSB, 2010).

In light of this criticism, business schools appear to be at a strategic point of development but uncertain about which route to take in the long term (Datar et al., 2010). It is clear that business schools need to provide a clear sense of purpose, morality, ethics and positioning with respect to their role in society. Consequently, issues such as the influence of globalization, innovation and knowledge society, the value and impact of academic research, and the importance of clear perspectives about entrepreneurship and leadership are the highest priority for this continuing reevaluation of the business school (Thomas & Cornuel, 2011). Business schools have to carefully address new market realities, new workplace and demand of the companies. If appropriate actions are not taken, three major threats, such as corporate training, international programs and modular learning by the general public, may eventually outplace demand for the traditional MBA programs (Friga et al., 2003). Determining if, how, and when to keep up with the speed of business is becoming more important for business schools as they also face increased competition between each other (Richards-Wilson, 2002).

Engagement with innovation at business schools creates an opportunity for them to overcome the existing criticism and to positively impact the business practice and the society in general. Innovation should become a defining characteristic of the mission of business schools and every MBA program should become a catalyst for innovation. Only by engaging with innovation, it will be possible to create new approaches to management education, to facilitate the process of innovation and to prepare future business leaders who can contribute to the national development and a better economy (AACSB, 2010; Thorpe & Rawlinson, 2014).

The criticism business schools and their MBA programs received makes it debatable whether the content in degree-based education has kept or can keep pace when it comes to the rapid change associated with innovation. However, the authors of the Business Schools on an Innovation Mission Report (AACSB, 2010) believe that, if innovation is addressed properly, there is a wide range of opportunities for business schools to create value in the society by fostering innovation. The authors of the report suggest that when addressing innovation, some schools may choose to center their educational programs on preparing individuals to contribute effectively to innovation. Others may choose to focus on improving innovation in organizations more directly (e.g. applied research). Still others may place most of their emphasis on working directly within their community to foster innovation (e.g. business incubators).

The next chapter of this work discusses how engagement with innovation at business schools can turn the discussion about the relevance of MBA programs from what is wrong with them to how to make out if them a powerful force in driving constructive change for society. Business schools have the capacity to create more stable foundation for the world and the commitment with innovation within them can enable such a transformation (AACSB, 2010).

4.3 Characteristics of Management Education for Innovation (MEI)

4.3.1 A Concept of Management Education for Innovation

When defining management education for innovation it is important to distinguish between innovative management education and management education designed for innovation. The former is about curricular innovation which helps to improve the curricular offerings and establish programs of distinction and influence, whether these programs aim to improve the innovation capacity of students or not; The latter is about programs designed to equip the students with the skills which would help them undertake innovative initiatives and implement them within an organization (Maritz & Donovan, 2015), whether the methods of achieving this objective are traditional or innovative (Maritz et al. 2014).

The previous chapters have outlined that in recent years there has been a strong recognition that good management is a critical element in the innovativeness of the economy, and hence its competiveness and prosperity (Institute of Competitiveness and

Prosperity, 2009; Bloom et al., 2007; Camelo et al., 2006; Daellenbach, McCarthy & Shoeneker, 1999; Carneiro, 2000; Giannopoulou, 2011; Wong, 2013). Good management drives the demand for innovation through well-developed businesses and successfully executed strategies; it affects the ongoing supply of high quality innovation by setting research priorities and managing technical resources; and it is key to the financing of innovation through the assembly of resources and the best allocation to investments. Improving management capabilities will create great opportunities for strengthening the economic prosperity.

Despite the importance of management, governmental innovation strategies do not always take adequate account of this (e.g, Alexopoulos & Tombe, 2010). They are primarily focused on increasing the technical resources driving the supply of innovation. Emphasizing only tangible technologies, government policies have heavily favored R&D incentives, but neglected the development of intangible processes and management techniques. The same can be said about education strategies: while there are pervasive discourses on the relevance of creativity and innovation in education strategies, the main focus of attention is currently placed primarily on engineering studies (e.g. Liebenberg & Mathews, 2012; Bergey, 2012; Soares, Sepulveda, Monteiro, Lima, & Dinis-Carvalho, 2013) and not management studies.

Taking into account the results of the recent studies, it is important to take the initiatives which enhance the role of skilled management in the innovation strategy. One of such initiatives should be a greater emphasis on management education designed for innovation (Institute of Competitiveness and Prosperity, 2009; AACSB, 2010; Van der Colff, 2004; Martin, Rodriguez, & Hernangomez, 2009; Thomas et al., 2014b). Thomas et al. (2014b) argue that business schools themselves should become innovators; they "should be catering for the innovation generation – business schools should promote innovation cultures" (p.57). Therefore, there is "the urgency of curriculum reform and the radical re-thinking of management education paradigms and philosophies in an innovative, technologically driven economy" (p.59).

According to Business Schools on an Innovation Mission Report (AACSB, 2010), management education designed for innovation has the following objectives: to educate managerial talent which could be central to the demand, supply and financing of innovation – all critical elements in the innovation process; to provide the graduates

with a specific knowledge essential to the implementation of breakthrough ideas; to promote an understanding of technical advances; and to educate future managers to be inventors, that is to be able to implement managerial innovations within a company.

The report states that management education for innovation should concentrate on innovation activities that involve ambiguity, change, and risk, which in turn amplify the need for leadership, communication, and collaboration. The report reads:

> Higher levels of subjectivity increase the importance of social processes, especially since innovation cuts across organizational functions and, increasingly, across organizations. The special case of management innovation (as opposed to technological or scientific innovation) is less about positional power, or what managers know and can use from the metaphorical management "toolbox." It is more about the skills managers have in applying knowledge, judgment, and the ability to adapt and fashion new tools to solve problems creatively (p.22).

This correlates with the conclusions of The European Conference on Entrepreneurship Education in Europe (2006) which highlighted the following elements of relevance for entrepreneurship education: the development of personal attributes and skills that form the basis of an entrepreneurial mind-set and behavior (e.g. creativity, sense of initiatives, risk taking, autonomy, self-confidence, leadership, and team spirit); the improvement of specific business skills and knowledge of how to start a company and to run it successfully. It is not surprising because management education for innovation is often discussed in the context of entrepreneurship or as an interconnection between entrepreneurship, innovation, and creativity (e.g. Edwards et al. 2015; Lewrick, Raeside, & Sailer, 2010). However, as noted above, innovation is more than entrepreneurship as it always involves some form of value creation (Sullivan, 2011). According to Maritz and Donovan (2015):

> Entrepreneurship relates to the discovery, evaluation and exploitation of opportunities in the process of business start-up, creation and growth; ….Innovation relates to the development, adoption and exploitation of value-added activities in economic and social areas (p. 74).

The confusion between entrepreneurship education and innovation education is so strong, that Maritz and Donovan (2015) conducted a special research with the purpose to explore the synergies, similarities and differences between entrepreneurship and innovation education and training programs. Their conclusion is that despite the linkages and synergies between the two disciplines, entrepreneurship and innovation

education are two distinctively unique disciplines; while there are synergies between the two disciplines there are most certainly applications unique to each of them.

In the context of this study, entrepreneurship education is defined as "pedagogical programs or education that aims to develop entrepreneurial attitudes, skills and personal qualities; which are designed to empower individuals with the necessary tools to initiate a new business" (p.75). Innovation education is defined as "pedagogical programs or education for innovation capabilities and skills, which involve personal, technical and organizational qualities; designed to empower individuals with the necessary tools to undertake innovative initiatives and implement these within an organization" (p.75). The purpose of entrepreneurship education is to help entrepreneurs launch new ventures and understand the consequences of their decisions while the purpose of innovation programs is to enhance the innovative performance of individuals and organizations. According to Maritz and Donovan (2015), in order to achieve these outcomes, different content and pedagogy are required.

Nevertheless, there is currently a significant gap in the body of knowledge regarding the development and measurement of innovation education programs (Maritz et al., 2014). Thus, the only way to develop the innovation education framework is to employ a transparent and reproducible procedure from the entrepreneurship discipline; more specifically, entrepreneurship education programs, and identify substantial synergies between the innovation and entrepreneurship literature (Maritz et al., 2014). In the context of this study, innovation education programs (IEPs) are defined as "programs focusing on a management process that considers changes in market, technology and organization in an integrated way" (p.168).

Based on the example of MSc in Global Innovation Management (GIM) program delivered by a consortium of four universities, Maritz et al. (2014) study the components adherent to IEPs such as why (objectives), what (content), how (pedagogies) and for whom (audience).

The objective of the IEP is to "help potential innovators learn about innovation and innovation management" (p.169). Regarding the audience, it is said that each "IEP should be designed to meet audience and objectives of the program" (p.171). The contents of the IEP can be diverse and should be tailored to defined audience and

objectives of the program; they can include systems design, systems theory and engineering, knowledge management, innovation management, socio-technical systems, strategic planning, project teams and workgroups, enterprise modeling, product development, new usage of established product or service, knowledge of technology and innovation, etc. With respect to pedagogy of IEP, it can be traditional and include "lectures, seminars, workshops, case studies, teamwork, group work, guest speakers and interviews with innovators" (p.172). And it can be "less traditional" and include "experiential learning, action learning, simulation, blended-learning and online techniques" (p.172). Finally, assessment of IEPs refers to "the overall measurement of effectiveness of programs" (p.172). Assessment is driven by program objectives, content and pedagogies. The authors of the study recognize that assessing an IEP has proven to be one of the most challenging components.

Bement and Dutta (2014) ask whether innovation can be taught and reply: "We think so. If that seems strange, consider the many people who, until recently, doubted whether something as intangible as "entrepreneurship" could be taught" (p. 56). That's why they started the Educate to Innovate project with the purpose to gain a better understanding of the components of successful innovation. They interviewed successful U.S. innovators and conducted a two-day "Educate to Innovate: What and How" workshop which brought together more than 75 artists, academics, business managers, teachers, investors, leaders, and innovators to share insights on teaching innovation and related skills. Their finding correlate with Maritz and Donovan (2015) in a way that Bement and Dutta (2014) also argue that innovation differs from entrepreneurship. They argue that people often use the terms interchangeably, indicating the need to educate the general population on what the innovative process entails and then design distinct educational programs for innovation and entrepreneurship. Within the characteristics of innovation education they identified: 1) Ability to manage failure, "so that the innovation journey can continue and eventually bear fruit" (p.56); 2) The ability to identify problems and brainstorm about problems and not just solutions which is crucial for developing innovation-oriented thinking; 3) Soft-skills such as flexibility, friendliness, and the ability to participate in discussions; 4) Mentorship which encourages innovation.

Hall (2012) studies how organizations can better meet the innovation challenge and one of the identified ways of doing so is to provide special innovation training within an organization. While almost all managers believe that innovation is of significant importance for their organizations, it is not clear what the innovation skills and capabilities are. Hall (2012) writes: "There is a common misconception that innovation is a great mystery, that it's some dark art for blue-sky thinkers whiling away the hours on beanbags and coming up with fantastic new ideas" (p.62). According to Hall (2012) innovation training should "cover the full spectrum of practical skills often found in new product development and design processes, including uncovering new market opportunities, coming up with new ideas, designing new concepts, developing commercial propositions, developing business cases, prototyping and piloting, and building new ventures" (p.62). Cheung, Guillemette, and Mobasher-Fard (2012) have a similar opinion and state that the development of skills for innovation can be improved by increasing the integration of technical, business and communication skills training with practical industry experience.

Moreno (2014) presents his own model of education designed to enhance the capacity to innovate which is later tested in the online course for learning creative and innovative thinking. This model consists in three stages: 1) Generation of Ideas and Conceptualization which includes activities in order to find ideas, to combine them with other ideas, to evaluate and to come up with a concept synthesis; 2) Development and Demonstration – idea definition, construction of prototypes, feasibility tests; 3) Inversion and Commercialization – production processes and market launch. These three stages is the fundament of the model CREALAB which in turn has the following components:

- Creative space – a central part of the model which supports all the activities and which stimulates creative thinking;
- Perception – the first activity in the model which refers to the perception of reality in order to understand challenges, stimuli, problems and opportunities – these are the first steps in the innovation process;
- Comprehension – understanding of the problem in all its dimensions, listening to the reality;

- Generation – refers to creative intelligence, its objective is to obtain a wide range of possibilities around the subject in question, it is the essence of the creative process;
- Evaluation – with the activities of evaluation starts the process of innovation, there is a range of ideas but also a need to choose only one of them for its further development;
- Evolution – consists in not rejecting the ideas which are very attractive but with lots of inconveniences;
- Design – the realization of ideas;
- Communication – social impact of the innovation, search of supporting organizations, users and financing.

The elaboration of the concept of management education for innovation was additionally explored by Ivanova (2012). They asked the experts from the area of education and innovation to provide a broader definition of management education for innovation. The results of this study show that the experts believe that management education for innovation is the one which is not just educating but facilitating the students to be innovative. It is a type of management education which represents the platform for innovation where new ideas can be inspired and provoked. Management education designed for innovation opens students' mind, fosters the innovative attitude and develops the skills needed for an innovator thanks to the special environment for innovation in which the educational process takes place. Such environment is characterized not only by wide knowledge of management theories but by a business school being a think-tank of new ideas by definition.

4.3.2 Characteristics of Management Education for Innovation

In order to promote management education for innovation it is important to know its main characteristics and criteria. The number of studies in this area of research is still limited. However, by reviewing the results of different related studies, it is possible to establish the main features of management education designed for innovation. Additionally, Ivanova (2012) conducted the interviews with the experts from the area of education and innovation who were asked to define management education for innovation; the results of this study are considered for establishing the characteristics of management education for innovation.

4.3.2.1 Innovativeness of Management Techniques Taught

Management skills are important enablers that support innovation. Management skills are critical to organizing R&D efforts, for setting priorities, developing strategies, and acquiring resources. Alexopoulos and Tombe (2010), when attempting to measure the rate of managerial innovation in Canadian companies, conclude that Canadian managers lack the expertise to employ the most productive management innovations. These authors believe that increasing the number of graduates from economics, business and management programs and raising funding for research in business management and related fields may help alleviate this deficiency. This kind of "business R&D", in their opinion, is to management what science is to engineering.

In order to measure this "business R&D" – innovation in management techniques – they track Library of Congress records of the publications of management books to define adoption of management techniques. This research indicates that increases in the publication of books on management are correlated with growth in productivity and prosperity. The authors conclude that economic growth results not only from increases in "tangible technology", such as R&D, and machinery and equipment, as most economists agree; but it is also the result of advances in "intangible technologies", such as management techniques and new processes disseminated in part through publications. Thus, it is possible to conclude that practicing managers receive informal education through latest publications and adapt the innovative techniques in their workplace which consequently increase the level of productivity and innovation.

However, the results of the study indicate that business schools and universities must disseminate these innovative management techniques through formal education as well. Advances in "business R&D" must become an essential part of curriculum of each academic business program. The research conducted by Bloom and Reenen (2006) makes this point stronger. These authors provided a detailed approach to how well manufacturing companies had implemented advanced management techniques. They presented a robust research methodology to measure management practices in manufacturing firms. The results of the research indicate that the quality of management practices correlates well with the firm and industry productivity and the rate of innovation. Accordingly, it is a role of business schools to assure that students learn about the latest and the most effective management practices and know how to

implement them in their workplace. Thorpe and Rawlinson (2014) come to similar conclusions indicating that in order to promote innovation, business schools should research problems that matter to business and disseminate knowledge within all potential audiences. Bisoux (2008) states the same: "as management educators we should develop people who can take the lead in inventing new management practices and models that will be critical in the new century. We need to teach them to be management innovators. If we don't start with this generation, I don't know when we start" (p.24).

4.3.2.2 Creativity

Several authors have recognized that innovation is best encouraged through creativity (e.g. Tushman & O'Reilly, 1997; Heunks, 1998; Doan & Kennedy, 2009; Kalyar, 2011; Somech & Drach-Zahavy, 2013). The generation of ideas is a crucial part of the innovation process and creativity is the thinking process that helps generate these ideas. According to Garel (2015) just having knowledge on a subject is not enough; while knowledge is important, with only knowledge it is only possible to reproduce and not to create something new. Innovation requires knowledge and creativity. Fillis and Rentschler's (2010) point of view is that creativity allows entrepreneurs to discover and exploit opportunities that enable their firms to be more competitive and innovative.

If creativity can be improved, then more alternative, novel approaches or unique solutions are likely to emerge in response to a problem (Roffe, 1999). Roffe argues that the process of stimulating creativity and innovation is fundamentally based on building the intellectual capital within the organization through professional training and continuous education. Such training and education should incorporate the core activities which would lead to the increased level of creativity. The same view is shared by Sandeen and Hutchinson (2010) who conducted a survey of continuing higher educators to assess the current state of education designed to enhance general creativity and innovation knowledge and skills and found out that the number of such programs are still modest and more needs to be done.

Florida (2002) discusses the importance of a so-called "Creative class" for innovation. Florida defines the creative class as including people whose role is to create new ideas, new technology and new creative content. Not only people of creative

professions are considered, but also those professionals in business and finance, law, health care and related fields. The author sees the key difference between the "Creative class" and other classes in the fact that those in the "Working Class" and the "Service Class" are primarily paid to execute according to plan, while those in the "Creative Class" are primarily paid to create and have more autonomy and flexibility that the other two classes to do so.

Camelo et al. (2006) observe that firm's growing interest in finding ways to raise their innovation performance has led to a vast literature centered around the concept of work teams regarded as a form of organization that promotes creativity and the individual, group, and organizational levels. Another similar study is by Somech and Drach-Zahavy (2013) who argue that team composition (aggregated individual creative personality and functional heterogeneity) affects team creativity, which in turn promotes innovation implementation depending on the team's climate for innovation. Gundry, Ofstein, and Kickul (2014) found that creativity training and education can impact team members' openness to change and sharing data and information crucial to developing and implementing innovations for their organizations. They specifically study an MBA course on creativity and measure its effect on working within a team. Results showed that creativity skills acquired by students influenced their self-perceptions of creativity, that they transferred their creativity skills to their work teams, leading to a positive impact on perceptions of team support for innovation.

This goes along with the conclusions of the paper published by the Commonwealth of Australia (2009) which states:

> Making innovation work requires a workforce with sophisticated skills of all kinds – including leadership and management skills. It also requires cooperative workplaces in which creativity is encouraged (p. 21).

Similarly, one of the conclusions of Business Schools on an Innovation Mission Report (AACSB, 2010) consists in business schools "convening the key players in relevant innovation systems and producing network benefits that boost creativity and facilitate the diffusion of innovation" (p.31).

As observed by Cohendet and Laurent (2015) nowadays managing creativity for innovation is a key challenge in today's economy. The management of ideas will play

an important role in driving the innovation process. To benefit from the full value of new ideas, management must know how to leverage the logic of creation and the logic of production and how to approach knowledge management practices. Therefore, it should be the role of business schools to facilitate the ability to manage creativity within the future MBA graduates.

According to the experts interviewed by Ivanova (2012) MBA programs designed for innovation should help students develop their creative capacity. The experts agree that without creativity there is no innovation. Several experts emphasized that business schools should teach students to think "out of the box", "out of the parameters" and "to widen their horizons."

4.3.2.3 Entrepreneurship

Crucial skills to promoting innovation are those related to entrepreneurship. Creativity is often related to entrepreneurship, whereas entrepreneurship is associated with innovation and economic growth (e.g. Phan, Zhou, & Abrahamson, 2010; Sarri, Bakouros, & Petridou, 2010; Gundry et al., 2014).

Martin et al. (2009) who study the effects of entrepreneurship education in Spain conclude that innovation is one of the most important competencies in business today and recommend that in order for firms to do things in new ways, entrepreneurial training should be provided to people who attempt to start up their business. Particularly, they study the effect of entrepreneurship education programs on satisfaction with innovation behavior and performance. They measure innovative behavior with the variable "satisfaction with innovation behavior". The authors focus on this aspect of the entrepreneur following the previous studies which hold that innovation constitutes the true essence of entrepreneurship. An entrepreneur breaks with conventions and creates products, new ways of producing, new business models, or new markets. Of the three dimensions (entrepreneurship education, specialized education and formal education) only entrepreneurship education has a direct and positive effect on satisfaction with innovation behavior.

The results of the study of Martin et al. (2009) may be explained by Baumol (2004). He observes that the entrepreneur-innovator has required less advanced education than the industrial scientist or engineer. More than that, his study suggests

that such limited education has been helpful to the entrepreneurs, and even almost essential, as a way of liberation from the rigidities and standardized ways of thinking that current practice in higher education is apt to impose. This does not mean, however, that future innovating entrepreneurs do not require any formal education. The author believes that in order to foster innovating entrepreneurship, universities must design for future successful entrepreneurs a program which would avoid the inculcation of standardized and unimaginative ways of thinking.

Curtain (2004) observes the attitudes towards entrepreneurship education in different countries. He notes that entrepreneurship is so important for innovation that in Finland, for example, the need for institutions to provide education in entrepreneurship skills from the small and medium sized companies perspective was identified as an important focus in the new arrangements. And in Singapore the necessity of entrepreneurial skills has been recognized by the government. A government committee has proposed a comprehensive set of initiatives for promoting entrepreneurship. These include promoting greater creativity in the education system, attracting global entrepreneurial executives to Singapore as “mentors”, the development of the venture capital market, as well as making the legal environment more conducive for new companies.

Further evidence that entrepreneurship is linked to innovation is found by Benedict and Venter (2010) who suggest that in order to achieve innovation goals in South Africa, strengthening the entrepreneurial mindset of the citizens is needed. Dalohoun and Hall (2009) study how an innovation system emerges and develops in Benin. Their study highlights the pre-eminent role of entrepreneurship in innovation processes. Modrego, McCann, Foster, and Olfert (2015) present a model of regional innovation based on the matching of research and entrepreneurial skills. They conclude that there are unexploited synergies between support policies for innovation and support policies for entrepreneurship in the context of regional development initiatives in Chile.

Lewrick et al. (2010) analyze data from over 200 innovative companies which were created between 1997 and 2007. Their study explores the crucial competencies needed to start an innovative business and discusses the capabilities which have to be developed in order to sustain innovation and business growth. One of the conclusions is that entrepreneurship is of high relevance to successful management of innovation and

growth and innovation and entrepreneurship should be seen as inseparable from each other.

Hall (2012) who studies the characteristics of a training program designed for innovation within an organization writes that:

> Managers should also be coached around adopting entrepreneurial traits and a mindset for achieving new things in the corporate environment. Too often, corporates spend far too much time over-analyzing whether a particular new idea is likely to be a success or failure. An entrepreneurial attitude is more likely to move fast and fail early. Prove the idea through a test-and-learn approach (p.63).

4.3.2.4 Hard Skills versus Soft Skills

The prevalence of hard skills over soft skills in the MBA curriculum has been one of the main areas of MBA criticism in relation to its practical relevance (e.g. Datar et al. 2010; Hawawini, 2005; Thomas et al. 2014b). However, it has also been observed that hard skills may negatively impact the innovative attitude of the graduates. Thus, the impact of extensive training in hard skills (e.g. mathematics, finance, law) on innovation was first studied back in the 1980th with Hayes and Abernathy's (1980) study which pointed to the fact that substantial increase of senior managers whose background and expertise lied in the financial and legal areas was a major determinant of the decreased commitment to innovation. More recent studies come to similar conclusions. Baumol (2004) has observed that a student who has mastered a large body of the received mathematical literature, including theorems, proofs and methods of calculation, may be led to think in conventional ways that can be an obstacle to unorthodox approaches that favor creativity and accordingly, innovative attitude. Finally, the authors of the Business Schools on an Innovation Mission Report (AACSB, 2010) also note that "overemphasizing analytics" can discourage creativity which is necessary for innovation but in short supply among today's business graduates (p.23).

There are also studies which study the effect of technical training on graduates from other disciplines. Thus, Loras and Vizcaino (2013) study the effect of technical training on entrepreneurship in engineering students. The results indicate that engineering graduates rarely consider starting up a business and that technical training appears to be an obstacle to business initiative.

Opposed to hard skills are soft skills or those skills related to the interpersonal issues of business management. Today, for a person, organization, economy or society to be innovative requires wide-ranging skills, including soft skills, making it a priority to ask how effectively education systems foster them (OECD, 2010). OECD defines "soft skills" as the skills "that include working in teams and heterogeneous groups, communication, motivation, volition and initiative, the ability to read and manage one's own and others' emotions and behaviors, multicultural openness, and receptiveness to innovation" (OECD, 2010, p.80)

Van der Colff, (2004) argues that it is important to understand that business managers must not only be able to see the work environment in a structured, rational and analytical way (ability provided by training in hard skills), but also develop the capacity to see it as a dynamic and complex system that is ever evolving (ability provided by training in soft skills). This would ask managers to employ a creative and innovative model of thinking. According to this author, the factors that can be used as a guideline to develop managers that create an enabling innovative culture are as follows: desire to seek individual challenges and thirst for self-knowledge; motivation to learn continuously; ability to rethink old ways of doing things and look for new ways to innovate. Van der Colff (2004) compares traditional management skills associated with ensuring organizational efficiency and skills required for change and the culture of innovation. Within the new skills required for transformational leaders of the future she identifies the following soft skills: strategic insight, leadership skills, change management, critical analysis, entrepreneurial skills, innovation, and coping with diversity. She believes that management educators should link the content they teach with these most important competencies and skills needed by current and future business leaders, professionals and entrepreneurs.

Hendarman and Tjakraatmadja (2012) came to the conclusion that soft skills positively influence technical innovativeness, which according to the authors is the ability to create a new product or some services in which new data and information are very important. Hall, Agarwal, and Green (2013) study the implications for the future of management education in Australia and conclude that building innovation skills implies the need for management education to better develop the following soft-skills: communication, team-work, problem solving, and leadership. Hall (2012) believes that

"softer skills around how to navigate the obstacles within a corporate environment and avoid innovation "death" (p. 62) are important within a training designed to develop skills needed for innovation.

When considering the extent to which business schools have done well in developing soft skills it must be admitted that many curriculum novelties tend to focus more on the content than on pedagogy – even though most practicing managers believe that it is best to learn and develop softer skills through practice with feedback (AACSB, 2010). Thus, according to AACSB, in order to support innovation, both content and skills must be addressed.

Cobo (2013) studies the demand for innovation skills in world renowned organizations and particularly, to how and to what extent soft skills are currently required by world recognized organizations such as Greenpeace, World Bank, OECD, Google, Apple and Samsung. After a revision of different perspectives to identify and categorize the key skills of the twenty-first century, the study describes seven non-technical cognitive and social key skills called soft skills for innovation. These skills are the following: critical-thinking (which includes problem solving skills and managing complexity); searching, synthesizing and disseminating information; creativity skills; collaboration skills (team working and networking, negotiation); contextual learning skills (adaptability and transdisciplinarity); and self-direction (risk-taking; new venture creation and entrepreneurship).

Development of leadership skills and decision-making process in general are seen by the experts interviewed by Ivanova (2012) as one of the most essential features of an MBA designed for innovation. In their opinion, in order to manage innovation, apart from being creative, a future manager has to have the leadership capacity and the ability to transform ideas from the imagination area to the area of realization and implementation. The experts also mentioned other interpersonal, soft skills as a characteristic of an MBA program designed for innovation. Thus, they believe that for a manager with innovative capacity it is necessary to have all kind of interpersonal skills such as decision-making, communication, negotiations. Teamwork and sharing have also been underlined because it is an essential element of innovation. According to the experts the MBA programs which only focus on traditional management hard skills

make students afraid of making mistakes and discovering something new which has a negative effect on their innovative capacity.

4.3.2.5 Modern Technologies

Hard skills are not to be confused with competencies in modern technologies, which represent the understanding of interconnection of business and technology. Back in the 1970th Rothwell (1977) presented a review of innovation studies conducted in the 1960th, in which he noted that in four out of nine studies successful innovators were characterized by the SEO or senior managers being scientists or technologists. These conclusions correlate with recent studies which suggest that managers today with career aspirations in technology or innovation management need to understand the implication of modern technologies on business management (Thursby, Fuller, & Thursby, 2009; Phan, Siegel, & Wright, 2009; Barr, Baker, Markham, & Kingon, 2009; Hawawini, 2005; Thomas, 2007; Yanez, Khalil, & Walsh, 2010).

In many increasingly knowledge-based economies, successful managers need better training in coping with technologists and in creating business growth and advantage through commercializing technology. Innovative new technology ventures require entrepreneurs who are skilled at collaborating effectively with scientists and engineers as well as with financial managers and venture capitalists (Barr et al. 2009). Yanez et al. (2010) review Technology and Innovation Management (TIM) pedagogy studies, TIM research, and the economic realities that initiated and continue to demand TIM education for managers. They share a viewpoint that technology and innovation is a significant and growing part of every manager's daily experience and needs its own field of pedagogy. Hall et al. (2013) name strong up-to-date technical skills within the innovation skills which business schools should aim to develop.

The changes in the business world and increasing participation of government and non-governmental organizations in innovation and commercialization have led to growing recognition of the narrowness of technology business education as it is practiced today. While there is no need for business students to know enough about science or engineering, they need to understand various aspects of how a technology works in order to predict cost, valuation, and other business implications of an invention (Thursby et al. 2009). In respect to this, a number of arguments support the potential

benefits of bringing together content, faculty and students from different disciplines into strong cross-disciplinary business curricula (Barr et al. 2009). Scuotto and Morellato (2013) argue that despite the fact that entrepreneurship is increasingly seen as a source of innovation in all industries, limited knowledge is available on how student entrepreneurship leads to the birth of new enterprises and innovation. Within other important factors in promoting student entrepreneurship, they find out that the ability to use the latest technology is relevant in developing entrepreneurship mindset. Therefore, this study calls for reconsideration of the digital competence in higher education which should go beyond the simple training in technical skills.

McCann (2006) asks whether business schools prepare students for the "next economy" which is not driven by manufacturing but a science and knowledge-based perspective. This author argues that new industries revolve around the convergence of technologies such as computing, communication, and engineering. In his opinion the linkages between business schools and science faculties will become increasingly important and curricula must embrace a clear understanding of how technological innovations alter the nature of the marketplace and demand the development of new competencies, skills and capabilities. Understanding of technology and technological change should thus go far beyond the possession of basic computer skills and require an inclusion of general engineering and scientific principles and advances (Thomas, 2007).

This point of view is also shared by Clarysse, Mosey, and Lambrecht (2009) who conducted a number of interviews with leaders from both demand and supply sides of business education. The interviews highlight a dynamic field moving from traditional MBA programs towards more entrepreneurial "boot camps", from a case study oriented teaching style toward a mentoring approach, and from an emphasis upon general business toward working across disciplines yet being sensitive to underlying technologies. The study concludes that whereas general MBA programs were in demand in the nineties and at the beginning of the 21st century, today's companies require very specific training, either focused on company specific projects (e.g. creativity and social skills) or on the technology-specific context in which the company operates.

Some business and engineering schools have responded to these concerns by developing new courses and curricula related to technological entrepreneurship. One of

such examples can be MBA program at Sloan School of Management at Massachusetts Institute of Technology (MIT). This business school aims to use the innovative techniques and creative thinking that come naturally to scientists and engineers in order to give managers a competitive edge. Within MBA courses offered are courses such as "Strategies for Technology Based New Business Development", "Entrepreneurs in Innovation: Information Technology, Energy, Biotechnology and Communications", "Managing Technological Innovation and Entrepreneurship", etc. Another example of an emerging trend of technology management education can be seen in some countries with centralized educational systems (e.g. Japan, Ireland, and Singapore), which are graduating "bilingual engineers" with capabilities in technology and business. Yet, this trend of uniting technology with business education is still far from being in the mainstream (Phan et al., 2009).

Additionally, the experts interviewed by Ivanova (2012) believe that modern technologies should be part of an MBA for innovation in the form of teaching methods used. Thus, in their view different technological tools and instruments associated with innovation should be applied and used during the educational process in the MBA created for innovation. Within such educational tools are mentioned: interactive technological platforms, survey systems, simulation business games, and interactive and digital programs.

4.3.2.6 Change Management

The change is the main characteristic of the world in which we live today. Nothing lasts and everything flows. Bauman (2000) identified the modern epoch as "the liquid modernity" denominated so for its instability. Everything becomes temporal, diversified, ephemeral, and unstable. If so, to be competitive has turned to be the synonym of mobility and fluidity, of being able to anticipate and quickly respond to the increasing diversification of markets demand.

Innovation itself can be given different meanings in different contexts. Essentially the main characteristic of innovation is change. Since innovation can be classified into product/service innovation or process innovation, Curtain (2004) notes that with respect to product and service innovation companies rely "on technological innovation, or on reconfiguring existing products and services so as to present a radical

change that will be perceived by customers as offering more or better value" (p.21); and with respect to process innovation, he observes that:

> …organizational change is another source of innovation. New ways of organizing work in areas can also have a positive influence on competitiveness. This refers to changes such as involving employees in ways to make the workplace a collective resource for innovation. It can also refer to improving existing systems of distribution, finance, and manufacturing (p.22).

In this context, Augier and Treece (2009) clearly distinguish the important role of managers and entrepreneurs in organizations subject to rapid change. This manager/entrepreneur function "must articulate goals, help evaluate opportunities, set culture, build trust, and play a critical role in the key strategic decisions" (p.417). Real-world process of innovation can be ambiguous and risky, with insights evolving and perhaps being rejected in unpredictable ways. Additionally, there can be many drivers or enablers of innovation that interact with one another often in unforeseen ways. As these and other drivers come together, according to Sullivan (2011), management decisions that require adaptive and integrative thinking and visionary management skills are a direct enabler of innovation success. Hall, et al. (2013) list within innovation skills "the ability to think independently, critically analyze issues and problems, and to adapt thinking and analytical skills to different contexts and new problems" (p. 363). According to Cobo (2013), problem solving skills, adaptability and risk-taking are the skills needed for innovation.

Van der Colff (2004) believes that managers nowadays must be change agents that are able to bring about change to all aspects of the organization. Business leaders must know how to create conditions within the organization that will enable productive change to happen. She suggests that in order for managers to create the culture of innovation within the organization, they "should develop a passion for change" (p.501). If so management educators, being responsible for the preparation of future leaders, need to adopt this perspective in their teaching methodology. Van der Colff lists change management within essential skills for transformational leaders of the future.

Lewrick et al. (2010) also state that in the context of innovation and entrepreneurship education there is a need for building awareness for the change process of new ventures in order to become successful mature companies.

4.3.2.7 Coping with Diversity

Within the characteristics of a transformational leader and a manager of the future, Van der Colff (2004) emphasizes the ability to cope with diversity. She argues that the leaders have to realize the importance of valuing diversity and learn how to assist people of different values, beliefs, and backgrounds. This is needed in order for a manager to be able to combine all employees' efforts to benefit each individual and the organization as a whole.

Ostergaard, Timmermans, and Kristinsson (2011) investigate the relation between employee diversity and innovation in terms of gender, age, ethnicity, and education. The econometric analysis reveals a positive relation between diversity in education and gender on the likelihood of introducing an innovation. Hall, et al. (2013) when discussing the innovation skills argue that "international capabilities, including adaptability to international environments and diverse teams" are needed for innovation (p. 363). Cobo (2013) also states that "adaptability and developing cultural understanding and global awareness by engaging with learners of other cultures and transdisciplinarity" is one of the skills needed for innovation (p. 99).

For MBA students to learn how to manage context, they must be taught to appreciate differences and be exposed to other people's cultures that will, as a consequence, bring inside into their own work. Such an approach will help students to understand alternative models of human behavior as well as the role of trust and group cooperation as imperative in successful and innovative organizations (Van der Colff, 2004).

The experts interviewed by Ivanova (2012) also state that an international and diverse environment is a feature of an MBA program designed for innovation. One of the experts said that a key to be a better innovator consisted in building a network of contacts from different origins and being exposed to diverse ideas.

4.3.2.8 Applied Learning

Berry, Kumar, and Scott (2014) survey undergraduate entrepreneurship programs to identify courses that are being offered by these programs with the objective of determining if innovation is being addressed in the programs. One of the conclusions

of this study consists in the fact that graduates are not prepared adequately to work in the real world. Consequently, if graduates do not have sufficient practical knowledge and applied skills, then innovation in corporate organizations or startups may be difficult to achieve. According to this study, experiential learning should be mandatory for all entrepreneurship program students to understand innovation.

Thorpe and Rawlinson (2014) study how UK business schools could meet the innovation challenge and one of their conclusions is that business schools should promote built-in work experience, experiential learning and action learning. Their research shows the benefits of mixing formal instruction with work experience, for example, introducing research projects and dissertations based on work in hosting companies and involving students in solving real commercial problems of these companies. Entrepreneurial skills can be developed by business-incubator placements and similar experiences.

Another example of the importance of applied learning is provided by a micro-MBA model to train Nestlé employees to become agents of innovation within the company (Bauer, 2013). In contrast to traditional MBA programs, this corporate MBA covers the essential dimensions of an innovation project in a corporate environment which, in turn, substantially increases the confidence level of the teams working on a project. This project helps the MBA participants to develop their ideas to a high level of maturity and to present them to management – a real business opportunity motivates the participants and engages the team. Thus, the participants know if their projects can succeed and what the challenges are.

Several experts interviewed by Ivanova (2012) emphasized that applied learning is a characteristic of an MBA for innovation. The experts mentioned that in order to promote innovation, learning process should not take place only in a classroom but at a real-setting and that an MBA for innovation should not only ask a student to imagine something inexistent and unreal but to present them with an opportunity to do real things.

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The literature review allowed establishing the concept of management education for innovation (MEI) and its main characteristics. As emphasized by several authors the research in this area is still very scarce (e.g. Maritz et al. 2014). Nevertheless, considering the importance of MEI, MEI-related research has a potential to grow as the studies outlined above demonstrate. The next chapter summarizes the best practices to develop the competencies which constitute MEI in the higher education environment and from the perspective of the pedagogy which nurtures the development of such competencies.

4.4 The Best Practices for Developing the Competencies of MEI

The existing studies were evaluated with the purpose to collect the examples of courses, case studies, proven methodologies and practical exercises which enhance and develop competencies included in the characteristics of management education for innovation (MEI).

The literature review conducted describes the best practices for developing the competencies of MEI in the higher education environment.

4.4.1 Development of Creativity Capacity

Several authors have conducted research and implemented interventions with the purpose to demonstrate that creativity competency can be developed when the right approach is at place. Courses that focus on creativity have a positive influence on students with respect to the development of their creativity capacity (e.g. Dewett & Gruys, 2007; Karakas, 2010).

Because creative attitude is based on freedom of expression, thoughts and actions, its development requires the establishment of a non-threatening and supportive environment (Cheung, Roskams, & Fisher, 2006; Cole, Sugioka, & Yamagata, 1999). The special attention should be paid to personal teacher-student relationships, assessment and establishment of equal roles with instructor in class discussions (Cole et al., 1999; Dewett & Gruys, 2007). Thus, Dewett and Gruys (2007) present the graduate business education course which was designed to enhance creativity. They describe a practice when the instructor arrives at the first class meeting wearing motorcycle boots,

blue jeans, a sleeveless tee-shirt, and a baseball hat with the purpose to create informal environment and make a statement that this course would be different. Cole et al. (1999) explore the characteristics comprising a supportive classroom environment for creativity and come to a conclusion that the teacher's role in creating this kind of environment is vital. They especially underline "no one right answer" approach to stimulate motivation, openness and awareness of the creativity-inducing process among the students. Within other approaches to create a non-threatening and supportive environment, the authors mention brainstorming techniques (Cheung et al., 2006; Karakas, 2010; Cole et al., 1999), self-disclosing stories (for example, failed attempts to write novels, start a business and attain desired jobs) on behalf of the instructor as well as on behalf of students (Dewett & Gruys, 2007), and encouragement of originality (Berg, Taatila, & Volkmann, 2012).

Central to establishing a supportive environment which stimulates creativity, the authors underline the evaluation criteria of the work done by participating students. It is important for the students to feel that their effort and ideas are valued over performance results (Berg et al., 2012). Thus, the interventions with the purpose to enhance creativity in students do not use traditional grading systems, standardized tests or exams. Rather, the evaluation is based on student effort, ability to devise creative solutions, enactment of these solutions and reflexive papers (Berg et al., 2012). In the course proposed by Cole et al. (1999) the students undergo continuous assessment and assignments in which they are also required to reflect on the creative process, on what they have learnt and to think about how they might apply the skills that they have learnt to their own lives. Pinard and Allio (2005), when talking about improving the creativity of MBA students, propose an alternative mode of evaluation based on respect, cooperation, and collaboration, and not competition. Similarly to other creativity-inducing courses, their course is evaluated on pass/fail (or fire) basis. Students evaluate themselves and the group of students with which they worked at the end of the course. The criteria for passing the course consists in the fact that the students must be fully present (physically, emotionally and intellectually) in all scheduled meetings; use ethical behavior and honesty in interactions with peers and the instructor; demonstrate responsibility to the task of the group; contribute to the producing of final presentation; and be fair and cooperative in group interactions.

As mentioned above, several authors emphasize the importance of reflecting on the creative process while taking part in the courses especially designed to enhance creativity. In this respect, in the studies describing such courses writing a personal journal intended to capture insights and thoughts related to the intersection of the course materials is viewed as one of the practices which makes the students reflect and analyze a personal impact which the course has on them (Dewett & Gruys, 2007; Cheung et al., 2006). Another approach is to use field work and document new experiences to heighten alertness (Berg et al., 2012; Pinard & Allio, 2005) or encouraging students to look more carefully at what is going on around them (Cheung et al., 2006). Karakas (2010) proposes "Creative Mindworks" project where students are asked to write innovative articles. This project enables students to enlarge their vision about breakthrough global issues and ideas in management and organizations. Students freely select subjects they feel passionate and curious about and build analogies between management and as diverse fields as music, arts, politics, psychology, etc. This approach allows the students to reflect on the diversity of issues, stimulate spirituality, flexibility, and positivity.

Another interesting approach to improving creativity in students is offered by Pinard and Allio (2005) who believe that the students should practice creativity rather than engage intellectually with creativity. They design and implement "Creativity Stream" MBA course in which, instead of reading articles, discussing theories, or talking in a classroom setting about what creativity might be, the students actively practice creativity. For this purpose, every student is placed in one of seven creativity groups, each facilitated by a practicing artist, or "creativity consultant", from a different discipline, including music, fiction writing, poetry, art, etc. The artists meet with their student groups over the course and use especially designed exercises, assignments, and rehearsal practices to demonstrate the essentials of art. The goal is not to make MBA students into artists, but rather to re-stimulate their creative impulses and increase their confidence in their own abilities to imagine and create. Kerr and Lloyd (2008) propose a similar approach: they argue that management education needs to consider a trend in learning design which enhances creative learning through inclusion of art-based pedagogical processes. The authors propose that instead of skill training there should be a transformational learning through experiences that expand human potential, facilitated by artistic processes. In the center of their study is the Artful Learning Wave Trajectory

Model (Kerr 2006) which is a place for experimentation, exploration and discovery. This model represents a transformative process and provides an opportunity to understand and then apply artful processes to the creation and implementation of arts-based learning programs. Three examples of the artful learning process are provided in the study: 1) Sculpt It – the participants worked with clay to sculpt their perception of an assigned management theory. They were then asked to find another participant's sculpture that related to their perception. With that partner, they were asked to combine their representations into a larger "work" reflecting their mutual perception of the theory; 2) Movement and Dance – participants were given the opportunity to observe a dance troupe construct a dance. The objective for the participants was to create their own version based on the initial and expanded dance steps; 3) Designing Action – the participants designed applications based on earlier learning experiences. They were asked to consider what kind of performance space they would want for their own and other's work life and then asked to explore how they might get from where they are to their vision.

Scheepers and Lelani (2015) examine creative skills development in management education though stickiness stages, using the Synectics approach. Stickiness refers to the difficulty learners have to internalize knowledge and skills, enabling them to perform a task successfully. When learning a creative problem-solving process like Synectics, students find it challenging to change established behavioral routines, moderate their own and others' behaviors and deal with the ambiguity of the process. Therefore educational interventions should accommodate the stickiness stages learners go through as they develop team creative skills. The authors define four stages of stickiness in the creative development process: 1) Initiation – the difficulty in recognizing opportunities for change and acting upon them; 2) Implementation – focuses on information and resource exchange between the facilitator and participants; 3) Ramp-up – offers a short period where unexpected problems can be resolved and participants are likely to use new skills ineffectively, ramping-up gradually toward satisfactory performance; 4) Integration – when the use of new knowledge and skills become a habit, the development process is successful.

Kleibeuker, De Dreu, and Crone (2016) when attempting to develop creativity in adolescents use both divergent thinking and insight. Divergent thinking, according to

the authors, is the most commonly tested function in creativity research and includes such tasks as "generation of multiple solutions to an open-ended problem" and "being reflective of the cognitive flexibility pathway"; divergent thinking has a strong predictive value for creative success (p.75). In contrast, insight tasks have an established correct solution. These tasks require "establishing associations among unrelated or remotely related information and mentally restructuring the problem space" (p. 76). Insight solutions involve a sudden and an "Aha!" experience, a state of high uncertainty as to how to proceed, inability to report the processing that led to a solution.

Within exercises which improve creativity in students an extensive list can be found in Cheung et al. (2006). Thus, they describe such practical exercises as finding as many ways as possible to measure the height of a building with an X; using mind mapping and association to generate ideas for a new kind of X; creating possible scenarios to explain an unusual situation; solving a problem by making connections between the problem and an unrelated story; exploring the creative possibilities in designing a min-drama to convey a moral message; etc.

With respect to measuring the actual impact of the course, in other words, whether the course had a positive impact on students and whether their creative capacity was improved, Cheung et al. (2006) use measures of creativity relied on verbal divergent and drawing production tasks. In their opinion, production tasks are essential to an assessment of creativity because their open-ended format is least susceptible to the individual faking, they also allow to tap the individual's practical creativity for real-world problems. For example, they use alternate uses test (Christensen, Guilford, Merrifield, & Wilson, 1960) which requires students to list all the uses of a newspaper that they could think of. Other measurements included asking students to list as many ideas as they could about effective ways of learning their major subjects, and ways of creating jobs in Hong Kong; thinking about and listing as many meanings of two patterns the first of which showed five short (.5 cm) vertical lines organized 1.6 cm apart in two rows, with two lines arranged in the top row and three lines in the bottom row, the second drawing was an image of an entangled thread. Dewett and Gruys (2007) use pre-and post-surveys where measures included the belief in the importance of creativity, creative self-efficacy, willingness to take risks, five measures of creativity, and three items concerning the journaling process. Chuang, Zhi-Feng Liu, and Shiu

(2014) assess whether creativity has been improved by adopting a digital game, specifically "Arctic Quest 2," to measure the creativity of participants by encouraging them to overcome challenges in a realistic setting. This study develops a computerized approach for the assessment of creativity to ensure results that are more objective than those provided by conventional paper-and-pencil assessments.

Finally, Lim, Lee and Lee (2014) believe that creativity development can be successful only when integrated throughout the curriculum rather than by developing a few isolated courses. They suggest a holistic approach to an engineering curriculum which includes such components as extra- or co-curricular activities for students, such as short-term workshops, seminars, internships, contests, volunteer work, or club activities which promote collaboration and communication within different groups of students.

4.4.2 Development of Entrepreneurship Capacity

The development of entrepreneurial attitude within the University students is often seen as priority not only for students with a business major, but as an essential competency in the XXI century (e.g. Rasmussen, Mosey, & Wright, 2011; Garcia, Gil, & Ruiz, 2012). That is why in recent years numerous studies have appeared which discuss approaches to enhancing entrepreneurial attitude of students pursuing a variety of different University degrees (e.g. The Quality Assurance Agency for Higher Education, 2012). The main point in these approaches is that entrepreneurship education cannot be taught with traditional methods (e.g. Lobler, 2006).

There is a postulate consisting in that the students, as a norm, are not aware of what entrepreneurship is and how it can be relevant personally to them (The Quality Assurance Agency for Higher Education, 2012). Taking this into consideration, when the promotion of the entrepreneurial attitude is discussed, the first step which has to be done is to help the students to assess their current understanding of entrepreneurship (Tseng & Kraft, 2012; Bellotti et al., 2012). Thus, Tseng and Kraft (2012) suggest that students should accumulate the learning experiences of start-up companies, management, and skills for specific industries. They should learn about entrepreneurial performance and entrepreneurial networks. Similarly, Bellotti et al. (2012) employ games as a tool for allowing students to become familiar, mainly through practice, with

basic concepts of entrepreneurship and company management. Bellotti et al. (2014) rely on the idea that Serious Games (SGs) may be considered powerful tools to sustain entrepreneurship education and discuss key issues underpinning their adoption. They study the main games available on the market, such as Hot Shot Business, Industry Player, INNOV8, SimVenture and conclude that SGs can be a very useful tool, complementing a theoretical approach with the possibility of practicing and verifying knowledge and skills in several realistic scenarios. Heinonen and Poikkijoki (2006) in the course they developed, ask the students to study the literature on changes in the entrepreneurial society from different angles and reflect on the concept of entrepreneurship. A report elaborated by the Quality Assurance Agency for Higher Education (2012) calls for portraying entrepreneurship within students in terms of employability skills (especially within small businesses) and thus suggests teaching about enterprise in society, by looking at key theories and ideas on how the discipline has evolved.

While many University study programs are limited only with this first step (teaching about what entrepreneurship is) Pittaway and Edwards (2012) argue that this "about" form of entrepreneurship education merely enables students to grasp key knowledge about business start-up and, therefore, focuses on knowledge rather than skills or experience. In their opinion, the most effective approaches to developing the entrepreneurial capacity consist in "for" and "through" form of entrepreneurship education. The "for" form includes outcomes targeted at encouraging students to engage in activities that seek to develop key entrepreneurial behaviors (e.g. opportunity seeking, initiative taking), while "through" form focuses on creating generic entrepreneurial competencies (e.g. to find an idea, to appraise an idea). Both types are thus focused on skills acquisition and require students to engage in real projects or activities in order to get close to the lived experience of entrepreneurs. Their study has shown that 49.6 percent of entrepreneurship education programs sampled use the "about" form – a more traditional approach that is focused on knowledge accumulation and didactic pedagogies. Thus, by emphasizing the importance of "for" and "through" forms the authors aim to show the ways in which educators can gauge the link between desired educational outcomes and actual student achievement.

Following these "for" and "through" forms of entrepreneurial education, many authors agree that the development of the entrepreneurial capacity of students should begin with working on their personal traits (e.g. confidence, curiosity, self-awareness). Rasmussen et al. (2011) suggest that a championing competency is critical for a new venture to emerge and thus the entrepreneurial education should help the students to develop their personal commitment and the leadership role needed to sustain the venture start-up process. To become successful entrepreneurs, Tseng and Kraft (2012) argue that first of all the students should be able to think critically and assess the knowledge gaps in themselves and their networks. The entrepreneurial education, in their view, should help students to create holistic skills and abilities for problem-solving; to learn to tolerate ambiguity in self-expectations and explore a variety of learning styles or approaches to learning. Students should develop personal learning goals for entrepreneurial objectives in the future for which self-management and self-monitoring are crucial. Heinonen and Poikkijoki (2006) in the course they developed for University students, describe the so-called "aquarium activity" in which the students were asked to look at and evaluate entrepreneurial skills, attributes and behavior, as well as to experience different roles within entrepreneurship. Another task, a "building activity" was exploring themes that are closely related to entrepreneurship (e.g. change and uncertainty), and the students were exercising to organize as a team and experience the feeling of achievement. Gedeon (2014) describes a new MBA in entrepreneurship and innovation management program where the best practices in university entrepreneurship education were applied. The program's goals for student transformation included the development of eight competencies: lifelong learning skills; communication skills; teamwork skills; social capital skills (persuasion, negotiation, networking); creativity and innovation skills (alertness, opportunity spotting); guerrilla skills (bootstrapping, acquisition of resources); motivational skills (psychological capital, empowerment); entrepreneurial thinking skills (independent and critical thinking; self-management; adapting).

The Quality Assurance Agency for Higher Education (2012) specifically emphasizes the importance of entrepreneurial mindset. This kind of mindset includes aspects of personality and social identity; personal ambition and goals; personal confidence and resilience; self-discipline and organization; understanding of one's own motivation; ability to go beyond perceived limitations and achieve results; tolerance of

uncertainty, ambiguity, risk, and failure. In order to develop the entrepreneurial mindset, the authors suggest that the learning mode should be active, exploring problems and opportunities as vehicles for active learning and creative problem solving; the learning activities should be those that are designed to enable students to take a lead, show greater autonomy, and exhibit and develop confidence in key areas (for example, design a service or product to meet an identified need). Bellotti et al. (2012) offer to develop the entrepreneurial mindset by using serious games which introduce players to the main issues of a small enterprise. This kind of game deals with identifying a business opportunity starting from a problem or an event, identifying user needs, planning, solving a problem following an innovative or conservative strategy, making decision for the virtual business (e.g. which is the market opportunity in the city).

The concept of entrepreneurial opportunity is especially important in the education aiming to develop the entrepreneurship capacity. Rasmussen et al. (2011) state that within essential entrepreneurial competencies there is an opportunity refinement competency which consists not only in the ability to discover an opportunity but in the ability to further refine and develop the opportunity into a clearly articulated and commercially viable business project. Learning activities suggested by the Quality Assurance Agency for Higher Education (2012) similarly call for identifying an opportunity and visualizing potential actions. Heinonen and Poikkijoki (2006) in their intervention make sure that the atmosphere in the group fosters interest and creativity in order to give students the possibility to exploit the opportunity to find something new.

Nielsen and Storvang (2014) rely on the interfaces between the literature on entrepreneurship education and design thinking in order to offer an approach to developing entrepreneurship teaching model through design thinking. They suggest a teaching model named the DesignUni model in which idea generation, creative problem-solving and opportunity creation to form an unknown future is combined with processes of idea evaluation, idea exploitation and analytical thinking paying attention to existing and future markets.

Several studies demonstrate that entrepreneurship is closely related to real-life experiences and that the entrepreneurial competency can be best acquired when some kind of learning-by-doing components are present (Rasmussen et al., 2011; Pittaway & Edwards, 2012; Quality Assurance Agency for Higher Education, 2012; Bell, 2009).

Rasmussen et al. (2011) state the importance of leveraging competency to sustain entrepreneurial development. In their study they found out that in the University environment the key aspects of the leveraging competency are often lacking, such as how to access resources from industry partners and to communicate with external investors. Their results show that interactions with industry were important for developing the initial business concepts and thus the students should learn how to approach skilled personnel and work with industry experts. Pittaway and Edwards (2012) who underline the aspects of "for" and "through" forms of entrepreneurial education, suggest that students should run "real" companies and engage in consultancy within an entrepreneurial context. The Quality Assurance Agency for Higher Education (2012) mentions real-life "hands-on" skills building activities such as project work (for example, to research start-up opportunities), or assignments to develop and design new services or media for organizations; similarly to Rasmussen et al. (2011), relevance can be enhanced if external stakeholders such as real potential clients are engaged. Manju (2015) presents a four day long experiential learning project that was employed among students pursuing a management program, defining experiential learning as "a process in which learning transactions occur between the individual and the environment" (p. 2) in order to develop work skills, empathy for workers and knowledge of entrepreneurial processes. The students were asked to work as an employee for the first day and as entrepreneurs for the following three days. The learning outcomes shared by the students revealed that experiential learning projects of this kind gives a real time experience which instills in students a sense of efficacy, responsibility, cooperativeness, planfulness, and perseverance.

Learning-by-doing approach requires effective team-building skills; their critical role in the entrepreneurship education is underlined (e.g. Rasmussen et al., 2011). Garcia et al. (2012) carried out a project to test an innovative methodology for teaching entrepreneurship and inculcating entrepreneurial spirit among the students. The project involved setting up multidisciplinary teams of students to draw up business projects on the basis of an idea. The students coming from the scientific-technical areas would conceivably contribute a more technical and operational perspective to the project, while the business management students would offer the vision and conceptualization of the business, support in the market research, and above all the economic-financial analysis. The authors conclude from the results that the interdisciplinary elaboration of

business plans is an excellent pedagogical tool in economics/business and scientific-technical degrees in response to some of the challenges higher education is currently facing in the international context. The authors stress the potential of such projects to promote entrepreneurial spirit among students. Similarly to the development of creativity capacity, Heinonen and Poikkijoki (2006) state that the creation of a secure and familiar atmosphere within the group is needed when working on entrepreneurship competencies. Security is fostered through familiarization and it can be promoted by different warming-up and group-formation activities; for example, "morning carpet" activity acquaints the group members with one another and raises awareness of entrepreneurship.

4.4.3 Development of Soft Skills

The concept of "soft skills" usually involves such abilities as leadership, communications, team-building, negotiations and emotional intelligence. As in case with creativity and entrepreneurship competencies, soft skills neither can be acquired cognitively. Rather, their acquisition requires development of self-knowledge – through reflection and through feedback from others (Allio, 2005). Similarly, a great deal of learning occurs through transference – from one human being watching another (Cacioppe, 1998; Dugan & Komives, 2007). Understanding one's personal limits and reflecting on how personal horizons can be widened constitute the basis of developing the soft skills. Thus, Dugan, and Komives (2007) include in their leadership model consciousness of self – being self-aware of the beliefs, values, attitudes, and emotions that motivate someone to take action; being mindful, or aware of one's current emotional state, behavior, and perceptual lenses. Cacioppe (1998) states that leadership programs should help students to improve self-knowledge and self-worth.

Soft-skills are closely interconnected. Working on developing one ability, for example, leadership, requires the development of other soft abilities such as team-building and interpersonal skills. Dugan and Komives (2007) introduce the seven C's model of leadership development in University students; among others, one of the components of the model is collaboration which means having shared aims and values with the group and involving others in building a group's vision and purpose, and another component is citizenship meaning that leaders should recognize fundamental realities of any creative effort: civility differences in viewpoint are inevitable and must

be aired openly with civility. Taking into account the importance of team-building and collaboration skills in leadership development, Cacioppe (1998) proposes strategic team projects which usually involve four or eight participants working on a real organizational project defined by senior management. A senior manager is usually a project sponsor and the team is ultimately carrying out this project on their behalf. Projects usually involve gathering of data, interviewing staff or customers, understanding a part of the business that is important strategically and implementing or making recommendations to a panel of senior managers and outside panel members. Such projects help improve interpersonal abilities and team-building abilities; participants feel that their ideas and input to the program are valued and worth-while which helps them to experience some improvement in skills and abilities as a leader.

Kass and Grandzol (2011) discuss the development of leadership in the MBA students by introducing in the MBA curriculum an intensive, outdoor training component (OMT) called Leadership on the Edge. OMT places individuals and groups in challenging, unpredictable, but safe outdoor environments for learning, risk-taking, decision-making, and skill development. The authors statistically demonstrated the value of OMT as a tool for leadership development. Over the course of a 14-week academic semester, MBA students who participated in OMT showed greater improvements in leadership practices than those in a classroom only setting. A similar approach is used by Dobson, Frye, and Ravi (2013) who implemented a program of Peer-Led Team Learning in two core courses of the MBA curriculum. The program combines leadership training with practical hands-on application of the ideas taught, and provides for an effective feedback loop. Hobson, Strupeck, Griffin, Szostek, and Rominger (2014) also place a great emphasis on team-work for developing leadership and study the effect of an MBA course where videotaping of student teams was taking place followed in each instance by peer coaching sessions and written instructor feedback. The authors demonstrate that this approach can be successful in teaching teamwork and team leadership behavioral skills to MBA students.

Winstead, Adams, and Sillah (2009) present a curriculum that has been implemented in the business program to enhance and balance students' soft skills with their intellectual development. The Leadership and Professional Development Program (LAPD) is designed to equip students with the soft skills necessary to

successfully advance in their careers as responsible corporate and community citizens. The LAPD model is based on leadership and accountability training and has the following elements: 1) leadership and professional development courses; 2) experiential learning; 3) Executive Speaker Series where student hear lectures on real world experiences from corporate leaders; 4) Leadership development workshops.

Boyatzis et al. (2002) discuss an acquisition of cognitive and emotional intelligence competencies by MBA students. They use graduating data from six full-time and three part-time cohorts taking an MBA program designed to develop these competencies and compare it to baseline data on two full-time and two part-time cohorts. Their results show that there was a dramatic improvement over time in cognitive and emotional intelligence of MBA students from different cohorts. The authors suppose that these changes were attributed to some components of the MBA program that changed and were not in place in the earlier program. Particularly, a course on leadership development and assessment which uses self-directed learning theory was added; a focus on specific competencies in selected courses while addressing course material, such as the marketing course that assessed students on the presentation skills or the operations management course using group projects assessing their group process competencies; a dramatic increase in the percentage of courses requiring field projects in companies, group work and student collaboration; and opportunities to participate in voluntary activities.

In their study Blaszczynski and Green (2012a) review the existing literature and present different strategies for developing soft skills. They especially emphasize the skill-building process model which consists in introducing the skill to be developed, explaining and/or demonstrating how the skill is developed, practice the skill with instructor guidance, and reinforce the skill based upon evaluation. Once students understand how soft skills are developed, activities for developing soft skills will be more meaningful to them. Regarding the activities to develop soft-skills, such as listening, interpretation, leadership, followership, communication, collaboration, work ethic, reflection, detail orientation, and presentation confidence, Blaszczynski and Green (2012b) recommend pyramid building activity for developing the communication skills, reflection journal activity, listening activity, "What's on a penny?" activity, the line-dancing activity, etc.

Within assessment measurements of soft skills, these authors underline pre-test/post-test; rubrics (checklists, role plays, logs, journals, reflections); semantic analysis with online free-form text (assessment of soft skills though student reflections submitted online in free-form text: the responses are analyzed in terms of autonomy, belief in public service, self-regulation, and commitment); and portfolios: communication should be assessed based on written, oral and nonverbal basis; time management – through student activity log, prioritization lists and projects diaries; conflict management – through reflective essay, group discussion audio recording, role play video recording; stress management – through stress journal, case analysis, management game video recording.

4.4.4 Development of Modern Technologies Skills

Mitchell and Singh (1996) define technology commercialization as ‘‘the process of acquiring ideas, augmenting them with complementary knowledge, developing and manufacturing saleable goods, and selling the goods in a market’’ (p.170). Technology commercialization covers a broad range of activities, including startups, spinouts, licensing, collaboration, contract research, consulting and open innovation. Therefore, according to Nelson and Monsen (2014) developing educational resources on technology commercialization is not as simple as adapting an existing entrepreneurship or new product development course, but rather developing new contents and approaches. Within these approaches the authors state collaboration between researches, commercial businesses, universities and governmental organizations.

Following this argument, Levie (2014) provides an example of how successful technology commercialization education at the University of Strathclyde (UK) is deeply dependent on the state of the university’s entrepreneurial ecosystem, calling the whole University a classroom for teaching and learning technology. This ecosystem consists in different activities all of which play an important role in fostering technology commercialization. The Hunter Centre within the University is responsible for teaching activities and delivers such courses to business students as Knowledge, Science and Technology-based Businesses, Entrepreneurship, Innovation and Commercialization, and New Venture Creation.

Phan (2014) describes the design and implementation of a technology commercialization course for business students. The course is designed from a standpoint that not all MBA students are interested in a career in technology commercialization. Rather, that all students, regardless of career goals, will benefit from a deeper understanding of the business of translation science, since the principles are broadly applicable to all innovation processes. The deliverables of the course include: an engagement agreement that student teams have to negotiate with the inventor and the office of technology transfer; briefing on the background of the inventor and the inventing team; a technology assessment of an invention or discovery disclosure. It discusses the key features of the discovery, a preliminary patent search to determine novelty, and a full description of the discovery, and its value in solving a problem; s a report on the intellectual property status of the discovery; the preliminary market research report; the final report which is a feasibility analysis of the invention.

Information systems (IS) and modern technologies are an integral part of every modern organization, however, the importance of IS is still undermined in the MBA curriculum, according to Aytes and Beachboard (2007). To improve this circumstance, these authors develop and describe Information Orientation Maturity Model which draws the relationship between business performance and several information and technology management concepts. This model is based on tacit knowledge, which is associated with "know-how" and is best learned by doing and general understanding of the importance of information, and not just information technology, through a series of readings, lectures, and a written case. In order to implement the Orientation Maturity Model, Aytes and Beachboard (2007) describe an MBA course in which the students were asked to conduct a project which consisted in finding an organization and getting access to its key management personnel; gaining agreement to conduct a survey within its employees; drafting on major discussion points/recommendations for the organization based on analysis of survey results; conducting a meeting with organization to discuss results of the analysis; and reporting the discussion with organization with the purpose to propose an action plan. Such approach to teaching IS and modern technologies insured that the students had greater appreciation and understanding of the role of information and technology management in the success of an organization, and allowed the students to simultaneously benefit from observing the management issues in the organization.

Thomas and Thomas (2012) raise the problem of using new social media and Web 2.0 technologies in business school teaching and learning. Their notion is that the modern students come from significantly different backgrounds than their professors; the modern students grew up with iPads, social networks and smart phones. Thus, the teaching of modern technologies at business schools should be reconsidered and should become an integrated part of the whole curriculum and not stay as isolated courses. The authors propose such models as building genuine two-way learning community participation with the use of modern technologies, provide continuous feedback and personal assessment – participation online is easily measured and monitored, use blended models of education with constant presence of modern technologies.

5 RESEARCH DESIGN

5.1 Objectives and Hypotheses

5.1.1 Main Objective

To improve the MBA students' innovation capacity by delivering a validated MBA study course methodologically adjusted to innovation.

5.1.2 Specific Objectives

Objective 1: To design and validate an MBA study course methodologically adjusted to innovation which features the characteristics of management education for innovation.

Objective 2: To deliver the validated MBA study course methodologically adjusted to innovation.

Objective 3: To evaluate whether the MBA study course methodologically adjusted to innovation improves the MBA students' innovation capacity by applying quantitative and qualitative instruments.

Objective 4: To assess whether the teaching methods selected to enhance innovation produce such an effect in the students' innovation capacity.

5.1.3 Hypothesis

After attending the MBA course methodologically adjusted to innovation the students will demonstrate improved innovation capacity and skills.

5.2 Research Methodology

5.2.1 Methodological Paradigm

The present study is a mixed methods research and integrates both qualitative and quantitative techniques for data analysis with the main focus of the study being placed on participatory action research methodology.

A mixed methods research is adopted taking into account the specific research objectives which require the use of either qualitative or quantitative paradigm. Many

studies about mixed methods designs (e.g. Creswell, 1994; Morgan, 1998) have focused on the use of component (parallel or sequential) designs in which the different elements are kept separate, thus allowing each element to be true to its own paradigmatic and design requirements. Thus, mixed method research is applied to strengthen every type of information collection and minimize the weak points of every of both qualitative and quantitative approaches.

In the center of this study is participatory action research investigation methodology (PAR). Reason and Bradbury (2008) define a participatory action research (PAR) as seeking to create a learning environment that connects theory and practice with action and reflection as an outcome of participating with others. Beamish, Bryer and Beamish (1999) call PAR a process-oriented research methodology which changes subject-object relations, empowering the subjects and engaging the objective researcher with the subjects. These authors argue that it is irrelevant whether PAR methodology is qualitative or quantitative, it is the synthesis and blending of roles across the total research activity that constitutes the nature of PAR. The engagement of non-academic participants working closely with academics is what holds the premise for research translating into practice and vice-versa: PAR intends to help its co-participants to deepen their understanding of the social world in order to reflect and act on everyday challenges related to the studied phenomenon (Kemmis & McTaggart, 2005). According to Whyte (1989) PAR is a powerful tool of applied social research that mutually benefits researcher and the subjects being studied; the traditionally objective, professional researcher becomes more the research consultant and educator of subjects, learning from and learning about the subjects.

Minkler (2000) outlines the following prerequisites for a successful PAR study: there is a balance between research and action; it is participatory; a joint process occurs that engages participating members enabling an equal contribution; there is a co-learning process; participants get an opportunity to increase control over their lives by improving their skills and problem-solving abilities. Additionally, during all stages of PAR there is collection and analysis of data, reflection and knowledge generation (Somekh, 2008). PAR is a cyclical process where each cycle comprises a planning phase, an action-and-observation phase and a reflection phase (Kemmis & McTaggart, 2005).

A PAR approach is often chosen due to opportunities for student involvement within educational program development, implementation and review stages (e.g. Peterman & Kennedy, 2003; Hattena & Ruhland, 1995; Burmeister & Eilks, 2013; Fowler, Wu, & Lam, 2014). Thus, for example, the Participatory Action Research model developed by Eilks and Ralle (2002) has been used in many projects in chemistry education curriculum development and classroom research (e.g. Eilks, Markic, & Witteck, 2010): the basis of this model is the systematic use of empirical research evidence, which is connected to transformative actions in classroom teaching. Similarly, in this study the empirical research evidence from the previous studies is transformed into practical applications in the classroom in order to achieve the set objectives.

According to Burmeister and Eilks (2013) when PAR is used for curriculum development, first new teaching approaches are designed, then applied and tested. The ultimate objective of such research is to cyclically improve teaching practices by applying newly-developed units in different groups. The prototype designs are used as early as possible to see if they have the potential to solve specific problems in education and teaching practice.

Following Burmeister and Eilks' (2013) approach, PAR is used as a center research methodology of this study. The course which aims to improve management education for innovation competencies is first designed as a prototype and then tested in the classroom. The data collected during PAR from various sources (e.g. practical exercises, quantitative questionnaire, student diaries) are then used to analyze whether the intervention was successful in terms of the objectives for which it was designed and planned. The scope of the present study is to develop the first prototype of the MBA course methodologically adjusted to innovation in order to propose a foundation for further research where the background could be derived from the conclusions and the results of the initial prototype design which could be improved for a better outcome in its future applications.

5.2.2 Theoretical Justification of Methodology Used

Nowadays limited research is available on the subject of distinctions between a type of management education which is designed specifically for innovation and a type of traditional education. However, considering the importance of the subject, some

authors have supposed that the design of the educational process has significant consequences for the individuals engaged in innovative activities (Baumol, 2004). A number of studies emerged which explore different educational characteristics that can facilitate the engagement with innovation (e.g. Baumol, 2004; Van der Colff, 2004). Nevertheless, there is still much to explore in the area, particularly whether these educational characteristics produce any changes in students' innovation capacity.

In this context, participatory action research (PAR) seems an appropriate research methodology as it allows for designing an educational prototype based on theory available and testing it within the natural environment thus obtaining empirical evidence without the use of experiments (Burmeister & Eilks, 2013). As PAR is normally accompanied by evaluation instruments (e.g. Steinert et al., 2006) it becomes possible to obtain a rich set of data from various sources both of qualitative and quantitative nature (Beamish, Bryer, & Beamish 1999). For these reasons, PAR is not classified either within quantitative or qualitative methodological paradigm, but rather the studies which involve PAR often fall into mixed-methods research methodology (Westhues et al., 2008) or multimethod because they include "the conduct of two or more research methods, each conducted rigorously and complete in itself, in one project. The results are then triangulated to form a comprehensive whole" (Morse, 2003, p. 190).

In this study, the methods are integrated during data collection and analysis, with the quantitative and qualitative methods being utilized throughout the study.

Thus, the advice of innovation experts by using a semi-structured interview (qualitative method) is sought in terms of validating the prototype design of an MBA course developed, the structure of the course and its methodologies, techniques and exercises proposed with the purpose to modify the course design where necessary. Similar approach was adapted by Triantafillou, Pomportsis, & Demetriadis (2003) when the experts were consulted with the purpose to validate the design of an adaptive educational system based on cognitive styles. Another similar study reports the design of a prototype of portfolio for development and assessment purposes. A portfolio prototype was developed according to theoretical choices based on portfolio literature and an interview study was conducted in which portfolio experts were asked to judge to

what extent the theoretical choices were reflected in the prototype developed and which modifications were needed (Tigelaar, Dolmans, Wolfhagen, & Van der Vleuten, 2004).

On the other hand, within intervention evaluation approaches, there is a pre-test – post-test design with the use of qualitative instruments (the one which is utilized in this study) which is typical for studies that involve participatory-action research (PAR) (Steinert et al. 2006). Examples of studies from the area of education which used PAR coupled with pre-test – post-test design include Ravesloot et al. (2007) where this design is used to promote health opportunities within people with disabilities in order to reduce the incidence and severity of secondary conditions that further limit their participation in society; Peterman and Kennedy (2003) who examine the effect of participation in an enterprise education program on perceptions of the desirability and feasibility of starting a business and use a pre-test – post-test control group research design; Hattena and Ruhland (1995) who research college students' entrepreneurial characteristics and attitude change toward entrepreneurship after participation in a Small Business Institute program and apply Entrepreneurial Attitude Orientation instrument at the beginning and end of the SBI program. Pre-test – post-test design, when a quantitative instrument is used, aims to measure the phenomena which have previously proved to be statistically significant in relation to the subject investigated and to analyze the effects of an intervention. It provides objective data which can be supplemented or interpreted by qualitative findings (Steinert et al., 2006).

Another pre-test – post-test measurement used in this study are practical exercises. Two innovation case studies related to the issues of innovation in addition to a creativity exercise are used during the pre-test and post-test stage of the participatory action research. The use of practical exercises is employed in educational research not only as intervention practice but also as an assessment of the results. For example, Report by the ITiCSE 2001 Working Group on Assessment of Programming Skills of First-year CS Students (McCracken et al., 2001) shows a way the exercises have been used to investigate the programming competency students have as they complete their first one or two courses in computer science. The results are evaluated towards a developed General Evaluation Criteria developed by the researchers. A case-study as a pre-test – post-test exercise is chosen because case-studies are known as an interactive learning strategy which can evaluate the application of concepts to the real world

situations, considering building different skills that recognize high priority from low priority elements (Ruggiero, 2002). Using case study as a teaching method has been proven to be effective and beneficial (Kreber, 2001). Advantages of case study use include greater student and faculty interest and interactivity and increased reflection (Mostert & Sudzina, 1996).

To assess the data collected through practical exercises – Rubric is used. For decades, dating back to the 1960s, rubrics have been used in secondary and higher education to assess specific assignments and tasks (Isaacson & Stacy, 2009; Rosa, Winterman, & Jones, 2009). A rubric is defined as "a document that articulates the expectations for an assignment by listing the criteria or what counts, and describing levels of quality from excellent to poor" (Reddy & Andrade, 2010, p. 435). The origins of using rubric in education go back to the study of Diederich, French, and Carlton (1961). In their study they found that 94% of student papers received grades that were not consistent, thus affecting inter-rater reliability. As a solution to the problem, they developed a list of content and areas which teachers should use when evaluating student papers, these areas are the following: ideas (relevance), form (organization), favor (style), mechanics (grammar), and wording. The rubric developed became the start of the traditional five-point analytic rubric used to evaluate student papers today (Broad, 2003).

Since then, rubrics have been utilized in education in a variety of ways to evaluate students' work such as written papers, simulation exercises, and online learning (Shipman, Roa, Hooten, & Wang, 2012). Reddy and Andrade (2010) have reviewed the empirical research on the use of rubrics in higher education and have concluded that rubrics are used 1) in order to set clear targets for students regarding their work expectations and standards; 2) in order for instructors to have evaluation guidelines with clearly defined evaluation criteria of students' works; 3) in order to monitor academic performance; 4) in order to assess programs and instructional effectiveness;

When using a rubric it is important to design it carefully identifying clear criteria that students must display to demonstrate proficiency (Spence, 2010; Suskie, 2009). According to Reddy and Andrade (2010) a rubric has three essential features: evaluation criteria, quality definitions, and a scoring strategy. As Sanford and Reeves (2005) state

using a rubric "identifies performance competencies that separate student performances into a number of interrelated instructional concerns" (p.1). The advantage of using a rubric is that it guides the instructor to judge if the criteria is met and provide feedback to the student by aligning the instructor's expectation of performance measures (Hall & Salmon, 2003).

Finally, diary as a data-collection method is used throughout the intervention in this study. The diary as a method for data collection is used as an alternative method to interview. In the diary the participants are asked to record events, usually items of behavior, more or less as they occur while in the interview the information is usually obtained retrospectively. In this sense, the diary is needed when the information is easily forgotten, whether because it is insignificant (to the participant) or because it occurs frequently (Butcher & Eldridge, 1990). Diaries provide up-to-date data (Bailey & Ochsner, 1983) recorded in routine or regular processes and this approach allows the researchers to track data throughout the research process (Jarvis, 1992). Another reason for using diaries is to investigate issues that are not normally accessible via other instruments such as classroom observations or other emotions such as feelings of the participants which could not be otherwise revealed though interviews or questionnaires (Borg, 2006). In education, a relevant example is the study of Debreli (2011) who uses the diaries as a main data collection instrument to investigate and track student teachers' beliefs (whether they change or not after the intervention) about teaching and learning English as a foreign language throughout a nine-month pre-service training program.

Similarly to the study of Westhues et al. (2008) in which four data collection methods were utilized in the development of PAR including key informant interview (qualitative), focus groups (qualitative), surveys (mixed-method) and case-studies (qualitative), there are several different techniques and instruments used in this study in order to give coherence and ensure that the data converge and triangulate to produce greater insight than a single method could.

5.2.3 Research Design

Following the objectives of the research, the study revolves around the following phases on the macro level: 1) design of the MBA study course methodologically adjusted to innovation (Specific Objective 1); 2) delivery (intervention) of the MBA

study course methodologically adjusted to innovation (Specific Objective 2); 3) evaluation of the MBA study course methodologically adjusted to innovation (Specific Objective 3) and assessment of the effectiveness of the teaching methods selected and their impact on the students' innovation capacity (Specific Objective 4).

Qualitative data collection method (semi-structured interview) is used in the first phase of the study as a validation instrument. The intervention (the second phase of the study) represents itself a participatory action research (PAR). The quantitative research (quantitative questionnaire, rubrics) is used in the third phase of the study to evaluate whether the teaching methods believed to enhance innovation produce such an effect in students' general and managerial innovation capacity. Additionally, qualitative data collection method (student diaries) is used to complement the quantitative research results and to look deeper into the effects of participatory action research.

The main result of the work conducted within the first phase is to design a ready to be delivered course which implements methodologies and teaching methods believed to enhance business innovation capacity in students. Such design comes from the previous work of establishing the characteristics of management education designed for innovation based on the literature reviewed and interviews carried out within the experts (Ivanova, 2012) as well as research of methodologies and interviews with experts with the purpose of validating preliminary design of the MBA study course methodologically adjusted to innovation.

The main result of the work conducted within the second phase is engagement of the MBA students in the participatory action research with the purpose to improve their general and managerial innovation capacity.

Finally, the result of the work conducted during the third phase consists in evaluating the outcome of the second phase and assessing whether the MBA course methodologically adjusted to innovation and the teaching methods used were effective in achieving the main purpose – improving the MBA students' innovation capacity.

The table below depicts the three phases of the research and their relation with the objectives of the study, and outlines the instruments used and the methodologies applied during each phase.

Research Design: Phases of the Research Related to the Objectives of the Study

Phase 1: Design and Validation of the MBA Study Course Methodologically Adjusted to Innovation		
Objective	**Methodology**	**Instruments**
Objective 1: To design and validate an MBA study course methodologically adjusted to innovation which features the characteristics of management education for innovation	Qualitative Methodology	Template for Didactic Unit Development Semi-structured Interview
Phase 2: Delivery (Intervention) of the MBA Study Course Methodologically Adjusted to Innovation		
Objective	**Methodology**	**Instruments**
Objective 2: To deliver the validated MBA study course methodologically adjusted to innovation.	Participatory Action Research	Intervention
Phase 3: Evaluation of the MBA Study Course Methodologically Adjusted to Innovation		
Objective	**Methodology**	**Instruments**
Objective 3: To evaluate whether an MBA study course methodologically adjusted to innovation improves the MBA students' innovation capacity by applying quantitative and qualitative instruments. *Objective 4:* To assess whether the teaching methods selected to enhance innovation produce such an effect in the students' innovation capacity.	Qualitative and Quantitative Methodology	Quantitative Questionnaire Rubric for Data Assessment Diary

Table 1

Additionally, Table 2 outlines the timeline of the research composed of various activities and the sequence of the application of different instruments.

Research Timeline: Sequence of the Application of the Instruments Used in the Research

Phase 1: Design and Validation of the MBA Study Course Methodologically Adjusted to Innovation *January – September, 2014*		
Sequence	**Activity**	**Instruments Used**
1	Preliminary design of the MBA study course methodologically adjusted to innovation	Template for Didactic Unit Development
2	Validation of preliminary design of the MBA study course methodologically adjusted to innovation	Semi-structured interviews with experts
3	Modification of design of the MBA study course methodologically adjusted to innovation according to the results of the interviews	Template for Didactic Unit Development
Phase 2: Delivery (Intervention) of the MBA Study Course Methodologically Adjusted to Innovation *October – December, 2014*		
Sequence	**Activity**	**Instruments Used**
1 Pre-Test	Application of Quantitative Questionnaire (YISMT)	Youth Innovation Skills Measurement Tool (YISMT) (Chell & Athayde, 2009)
	Practical exercises with the students to evaluate initial managerial innovation capacity and skills	Rubric for Data Assessment
	Creativity measuring exercise	Rubric for Data Assessment
2 Intervention	Course delivery	Intervention
	Collection of student diaries	Diary
3 Post-Test	Application of Quantitative Questionnaire (YISMT)	Youth Innovation Skills Measurement Tool (YISMT) (Chell & Athayde, 2009)
	Practical exercises with the students to evaluate initial managerial innovation capacity and skills	Rubric for Data Assessment
	Creativity measuring exercise	Rubric for Data Assessment
Phase 3: Evaluation of the MBA Study Course Methodologically Adjusted to Innovation *January 2015 – February 2016*		
Analysis of the data collected during the Phase 2		

Table 2

5.2.4 Intervention

The intervention in this study is planned in the form of a course within an MBA program in an international business school. The MBA course with a title "Business Innovation Management" is delivered in weekly sessions of two hours over ten weeks, each one including MEI characteristics.

The objectives of the course for the students are the following:

1. To improve the creative capacity;

2. To understand the concept of entrepreneurship;
3. To develop the entrepreneurial capacity;
4. To learn about the importance of modern technologies;
5. To improve the soft skills, particularly leadership, team-building and communications;
6. To cope with diversity.

The course is designed adapting the methodologies and exercises proposed in different studies for developing required competencies, however, with an adjustment in order to sue the coherent structure of the course. One of the main criteria for choosing the methodology and activities in class is that it corresponds to the topic discussed in that week which allows for a greater reflection and understanding on behalf of the students of the concepts, activities and methodologies.

The **creative capacity** of students (Objective 1) is developed by following the recommendations of Cheung et al. (2009), Cole et al. (1999), Dewett and Gruys (2007), Heinonen and Poikkijoki (2006) of establishing a non-threatening and supportive environment starting from the first class session as only in this type of environment the creativity can be enhanced. As described in Dewett and Gruys (2007) the instructor should wear informal clothes and should try to informally (not in the usual class style) approach the students. Self-disclosing stories as a teaching method are used to help eliminate the barriers between the participants and thus the students are asked to tell a brief story of a situation from their lives where they wished to be more creative (Dewett & Gruys, 2007). Within exercises and activities are the creativity-generating tools, following Karakas (2010) practice of positive management education for enhancing creativity; brainstorming techniques as suggested in Cheung et al. (2009) and Karakas (2010); "Morning Carpet" activity adopted from Heinonen and Poikkijoki (2006) with the purpose to acquaint the group members with one another; building analogy between management and such fields as music, arts, health care etc. and writing articles as part of "Creative Mindworks" project proposed by Karakas (2010) to stimulate creativity; "Creativity Stream" when an artist is invited to the classroom who practices creative approaches with the students and the students are asked to draw, paint, create a poem, etc. (Pinard & Allio, 2005); personal journals intended (Objective 4) to capture insights and thoughts related to the course – according to Dewett and Gruys (2007), Heinonen

and Poikkijoki (2006), Cheung et al. (2006) such journals and writing thoughts help students reflect on the materials of the course and activate their creativity abilities.

The concept of entrepreneurship and the **entrepreneurial capacity** of students (Objectives 2 and 3) are developed by first creating awareness of what entrepreneurship is (e.g. the Quality Assurance Agency for Higher Education, 2012; Tseng & Kraft, 2012; Bellotti et al., 2012) and testing the students' understanding of entrepreneurship (Heinonen & Poikkijoki, 2006). Within teaching methodologies for developing entrepreneurship capacity are:

- Team-building, which is seen as indispensable part of entrepreneurship and opportunity refinement competency (e.g. Rasmussen et al., 2011). Additionally team-building capacity constitute practicing soft skills (Objective 5) as outlined in Cacioppe (1998). Furthermore, "building activity" as presented in Heinonen and Poikkijoki (2006) explores themes closely related to entrepreneurship (change and uncertainty) and allows the students to learn how to organize as a team. The students are working in groups on developing some innovative ideas using effective team exercises in order to further refine and develop the opportunity into a clearly articulated and commercially viable business concept (Rasmussen et al., 2011). The purpose of this teamwork aims at developing an entrepreneurial mindset identifying a business opportunity, starting from a problem, identifying user needs, following an innovative or conservative strategy (Bellotti et al., 2012; The Quality Assurance Agency for Higher Education, 2012);
- A discussion about socio-cultural issues related to innovative products and services and the impact they caused in the world (e.g. invention of social media, smartphone, etc.) Such discussions, as outlined in Dugan and Komives (2007), help improve consciousness of self, congruence, commitment – all included in the 7 C's Leadership Model proposed by these authors. This way, soft skills are also practiced (Objective 5).
- Assessment of personal learning gaps and critical thinking (Objective 4) (Tseng & Kraft, 2012) and development of self-knowledge through reflection and feedback from others (Allio, 2005). This goes along with

recommendations made by the Quality Assurance Agency for Higher Education (2012) – knowing about what entrepreneurship means is important, but understanding one's perceived limitations and developing entrepreneurial mindset is even more essential;

- Learning-by-doing components are present for better acquisition of entrepreneurial capacity (Rasmussen et al., 2011; Pittaway & Edwards, 2012; Quality Assurance Agency for Higher Education, 2012);

Understanding of **modern technologies** (Objective 4) is developed using the approach described in Aytes and Beachboard (2007) who suggested the best ways of teaching modern technologies to MBA students. Their approach is based on Information Orientation Maturity Model which helps the students to understand the importance of information and modern technologies in general, not just IT to the organization and which consists in working on a project which involves gathering data on real organization, interviewing its staff and customers, understanding the business and suggesting improvements (possibly proposing a new idea on modern technologies).

The development of **soft-skills** in students (Objective 5) is assessed by applying 7 C's Leadership Model (Dugan & Komives, 2007) which consists in helping students to improve consciousness of self, congruence, commitment; team-building (Cacioppe, 1998); participating in real projects which helps to develop leadership capacities of students and allows them to practice their soft skills (Cacioppe, 1998); pushing the students outside of their zone of comfort, which, according to Dewett and Gruys (2007) stimulates creative approaches to finding solutions and develops communication and presentation skills; inviting guest lecturers, speakers to the classroom and learning through transference – from one human being watching another (Cacioppe, 1998; Dugan & Komives, 2007); playing the games which improve and develop different soft-skills following the game instructions from Blaszczynski and Green (2012 b). These games are pyramid building activity for developing the communication skills, listening activity, "What's on a penny?" activity, the line-dancing activity, etc.

It is assumed that **coping with diversity** (Objective 6) is covered by the fact that the MBA course is delivered in a highly international business school and the participants come from different countries of the world and speak different native languages (e.g. Cobo, 2013). It is especially important to note that in order to achieve

this objective the groups for the Final Project during the MBA course are composed in a way in which no students from the same nationality would work together in the same group.

5.3 Sample

5.3.1 Validation of the Prototype of the MBA Course (Sample of Experts)

This is the Dimension 1 of the study. The experts to validate the prototype of the MBA course methodologically adjusted to innovation are selected on the basis of their involvement with innovation related projects. The following criteria to choosing the experts are adapted:

1. Professional experience and practical implications. All experts have work experience in the projects that deal with innovation and its subcategories such as design thinking, entrepreneurship, etc. This allows them to make an input related to real-life demand for business schools graduates and requirements to modern professionals who have to deal with innovation related aspects at work.

2. Observation of the balance between industry and academic work experience. There are two experts who have PhD studies and one is a PhD candidate. These experts have conducted research on innovation related issues and published articles, so apart from their industry experience, they also have deep knowledge on academic side of the aspects of innovation. Moreover, all experts have professional experience as course lecturers, instructors in business schools, professional training organizations or entrepreneurship incubators. This means that they are familiar with aspects and strategies for teaching innovation and can suggest changes as to the use of activities and exercises proposed in the course design based on their own experience with working with students.

The sample consists of four experts who are asked for the input:

Expert 1: Design driven global business professional with more than 20 years' experience in design management, brand management, product and service innovation, telecom management, banking and insurance; international trade and business development. Holds Masters in Marketing and Information Technology degree from

Georgia State University of Atlanta, and visiting scholarship from Goiuzueta (Coca Cola) Business School, USA. He has a Ph.D. in Design Management from ESADE Business School.

Expert 2: Since 2002 has been a managing partner in 2creativo, a strategic design studio, combining strategy and design (graphic + product) to help companies transform good into great. She teaches courses for both undergraduate design students in Elisava (a design school), and entrepreneurs in several governmentally-run centers like Barcelona Activa. Graduate of IESE Business School and University of California.

Expert 3: Neuroscientist (Ph.D.) with more than ten years of prior professional experience in positions such as Product Manager & Consultant in (Neuro) Marketing Online in Multinational companies such as Yahoo, Granini, Lavinia, Interactiva, and Almirall. Specialized in On & Offline Consumer Behavior. Deep understanding in: Drivers, Motivations, Perception, Seducing, UX, Web Analytics, SEM, SEO, Decision Making, Patterns, Buying Processes & Consumption Processes.

Expert 4: Ph.D. Candidate in Education. ESEI International Business School Barcelona. Director, Master in Creativity, Communication and Start-ups. Professor of Entrepreneurship and Innovation in Business. CEO at TEK. Creative Education and online trainings. Head of European Projects at Fundació I2CAT. Coordinator and Advisor of European Education Programs at Generalitat de Catalunya, Dip. Acció Social i Ciutadania, Secretaria de Joventut.

5.3.2 Intervention – Delivery of the MBA Course (Sample of Participants)

The MBA course is delivered at a small international business school located in Barcelona – Global Business School Barcelona. The business school teaches all its programs in English. The classes are small, of not more than 30 people and there are not more than 100 students in total. Because of its small size, the management of the school is flexible as to the requirements of the intervention and decisions are easily taken without a need of multi-level approvals which gives room for intervention adjustments during the process. More importantly, within its faculty the business school has innovation professionals who collaborate on the delivery of the course. The management of the school also agrees to bring in additional speakers and professionals such as a practicing artist, entrepreneurs and modern technologies experts.

The sample for the intervention (participatory action research) consists of 25 young international MBA students with an average age of 23 years old who have just started their graduate studies. The course participants are coming from 13 different countries of the world, which by definition, covers the development of one of the competencies included in MEI – coping with diversity (Van der Colff, 2004). The countries the students represent are: USA, Russia, Egypt, Ireland, Kazakhstan, Belorussia, Venezuela, India, Croatia, Azerbaijan, Israel, Ukraine, and Bulgaria. All students speak fluent English and interact with each other in English. The table below depicts the number of participants by country and their native languages.

The Origin of Participants by Country and Their Native Languages

Country	Native Language	Number of Participants from the Country
Russia	Russian	3
USA	English	1
Egypt	Arabic	2
Ireland	Irish/English	1
Kazakhstan	Kazakh/Russian	9
Belarus	Belarusian/Russian	1
Venezuela	Spanish	1
India	Hindi	1
Croatia	Croatian	1
Azerbaijan	Azerbaijani/Russian	1
Israel	Hebrew	1
Ukraine	Ukrainian/Russian	1
Bulgaria	Bulgarian	2

Table 3

As observed from the Table 3, Russian is a dominant native language within the MBA course participants; it is spoken by a total of 15 students, 12 of whom are bilingual and speak another language at a native level, apart from Russian. The dominant country of origin is Kazakhstan with nine course participants being from this country.

Apart from English, some students speak more than one foreign language at different levels, within the foreign languages some of the participants know are German (spoken by four participants); Spanish (spoken by four participants); Turkish (spoken by

one participant); Arabic (spoken by one participant); Malayalam (spoken by one participant).

With respect to the undergraduate studies of the participants, their academic background is also as diverse as their countries of origin, although the dominant area of undergraduate studies is business administration or similar. The table below outlines the areas of previous studies of the participants, and the names of their respective undergraduate programs of studies.

Participants' Undergraduate Studies

Area of Study	Academic Program Name	Number of Participants
Business	Bachelor of Business Administration	9
	Bachelor of Business Administration and Accounting	1
	Bachelor of Commerce	1
	International Business	1
	Accounting	1
Total:		**13**
Politics, Law, Humanities	Political Science	2
	International Relations	1
	Corporate Law	1
	Humanities and Social Science	1
Total:		**5**
Economics	Financial Mathematics and Economics	1
	Economics and Management of a Company	1
	Economics	2
Total:		**4**
Engineering and Information Technology	Engineering	1
	Business Information Technology	1
Total:		**2**
Other	Hotel Operations Management	1
Total:		**1**

Table 4

In contrast to many MBA programs where a previous work experience is an obligatory admission requirement, at Global Business School Barcelona the students can start their MBA studies without any previous work experience. Thus, out of 25 MBA course participants, 11 students had a previous work experience related or not related to their area of studies ranging from a minimum of eight months to a maximum of six years before they started their MBA studies. There are two (2) students who had a previous work experience in sales of six and three years of duration; two (2) students who had a previous work experience in retail operations of three and four years of

duration; three (3) students who had a finance related position of one year of duration each; one (1) student who worked in PR and communications for eight months; one (1) student who worked as a tennis coach for three years; one (1) student who worked as a volunteer at non-governmental organization for three years; and one (1) student who worked in her family business (a restaurant) helping with daily operations for one year. The remaining 14 students either do not have any formal previous working experience or had some short internship placements as part of their undergraduate studies.

5.3.3 Intervention – Delivery of the MBA Course (Sample of Instructors)

Considering that within the objectives of the MBA course is the development of different competencies and skills (e.g. creativity, entrepreneurship, soft-skills), the instructors for the course were selected in the way which could guarantee a maximum achievement of these objectives. Thus, it was decided that there would be one main instructor in charge of organizing the class sessions, assisting the students with their Final Project and grading, another instructor who would deliver the sessions on soft-skills training, and three guest speakers invited to participate in three different class sessions.

The main instructor is the one who has also been one of the experts during the validation process of the MBA course. She has been chosen because of her practical experience as an instructor of entrepreneurship and innovation in business as well as her dedication to creative education trainings. Additionally, she is a Ph.D. Candidate in Education with her main areas of research being focused on innovation in education and creativity, thus she could easily understand the scope of participatory action research and facilitate the work of the investigator by providing relevant feedback, assessing and adjusting the teaching process in such a way that it would at all times correspond to the objectives of the MBA course. She is familiar with innovative approaches to the classroom teaching and knows how to engage the students in non-traditional learning situations. She is a foreigner herself in Spain which relates her in a positive way to the international students as they can share similar stories about their experience of living abroad. She is young and dynamic and participates actively in many creativity related physical activities (e.g. dance) and knows about the tastes and preferences of young people. Moreover, she is connected to the world of entrepreneurship and start-ups in

Barcelona, especially within the high technology sector and shares real innovation stories as well as brings guest speakers to the classroom.

The second instructor is responsible for delivering only the sessions related with direct soft-skills training (not as part of another activity e.g. work on Final Project where team-building as one of the soft-skills is also being improved). She is an organizational psychologist, business coach and trainer and has been working internationally in companies, universities and business schools. She accompanies people in developing their communication and leadership skills by giving impulse to their talent, charisma and other personal competencies. The human voice and body language are special features in her training style and thus her classes are highly practical with direct and straightforward application in the classroom environment. She is a Ph.D. Candidate in Communications, therefore the research scope of the MBA class is easily understood by her.

The invited guest speakers accompany the objectives of the MBA course and participate in class sessions which aim to develop one or another competency in order to provide a link with real practice.

One of the invited guests is a practicing **graphic artist** and designer. He has been invited in order to lead the "Creativity Stream with an Artist" activity. Additionally, he is also a design and education consultant, focused on encouraging the independent development of creative and innovative initiatives that contribute to the common good, free knowledge and open code. He also teaches in one of the design schools in Barcelona the subjects such as "Design Research" and "Contemporary Graphics". His style is very artistic and informal; he suggested his activity during the MBA course took place in the garden under the open sky.

The second guest speaker is **an entrepreneur**. He is a foreigner who came to Barcelona to create his start-up in tourism/ transportation sector. He offers tourists who visit Barcelona a service of renting a "vespa" – an innovative transport with touristic guides and routes integrated in it. A tourist can rent it and program any route without a need of a human guide. This young entrepreneur has taken part in the MBA course in order to share his inspirational story with the students and to set an example that everything is possible.

The third guest speaker is **a technological innovator and an entrepreneur** who has participated in the session dedicated to modern technologies. He launched a company within a technological sector and is now assessing other technological start-ups in Barcelona, especially those that are dedicated to the development of mobile applications. Because the main subject of the Final Project the students were working on consisted in developing a mobile application, he shared with the students his experience and gave the students practical advice related specifically to their applications.

5.4 Data Collection Plan

5.4.1 Instruments Used for Intervention Preparation

5.4.1.1 Didactic Units

In order to guide class instructions, didactic units are used, regarding skills, competencies, time managing (how much time to devote to each activity) and the contents. Writing it, different methodologies and exercises proposed in different studies for developing required innovation competencies are taken into account as well as what students have to learn during the course and how classes are planned. Didactic units are used to specify (and differentiate) the goals, content, methodology and evaluation scheme of each topic in class planning (Gómez & González, 2006).

A template used for development of a didactic unit consists of eleven elements which include:

1. Introduction
2. Didactic Objectives
3. Evaluation Criteria
4. Contents
5. Activities and Exercises
6. Methodology
7. Attention to Diversity
8. Organization of Space and Resources
9. Evaluation Procedure
10. Evaluations Instruments

11. Session Organization

5.4.1.2 Semi-Structured Interview with Experts

The interview is prepared taking into account the elements from the didactic units to which the experts have access before the interview. On the basis of previous studies each element is assessed based on the sub-dimensions (indicators) described in the Table 5. Each indicator is covered with a set of specific questions.

Interview Indicators per Study Objectives

Objective	Indicators	Associated Content
Objective 1: To design and validate an MBA study course methodologically adjusted to innovation which features the characteristics of management education for innovation	Coherence and Methodological Adjustment	- Sequence (order) of didactic units organization - Didactic objectives - Contents - Activities and exercises - Methodology - Attention to diversity - Organization of space and resources
	MEI Competencies to Develop	- General viewpoint on whether the course helps to improve MEI competencies in students - Discussion of each of the MEI competencies and chances for improving them as a result of the course
	Final Project	- Opinion on the proposed final project - New final project ideas - Organization of work on final project (milestones, supervision, inclusion of project work into session organization)
	Final Evaluation	- Opinion on proposed evaluation and assessment - Suggestions related to final grading and evaluation taking into account didactic objectives of the course

Table 5

5.4.2 Instruments Used for Intervention Evaluation

5.4.2.1 Youth Innovation Skills Measurement Tool (YISMT)

Currently, several measures exist to measure the innovation capacity. One of the best known measures of the capacity to innovate is Kirton's innovation adaptation (KIA) measure (Kirton, 1976). However, it has been designed to be applied in a workplace context and is limited to identifying those employees with strongest entrepreneurial attitudes. Other instruments developed later (e.g. Robinson, Stimpson, Huefner, & Hunt, 1991) also concentrate on measuring entrepreneurial attitudes and not innovation capacity and skills as whole which are not limited to only entrepreneurial ability.

A study commissioned by NESTA (the National Endowment for Science, Technology and the Arts), an organization in the UK whose aim is to transform the UK's capacity for innovation has proposed a Youth Innovation Skills Measurement Tool (YISMT) (Appendix I) which measures general skills needed for innovation within young people (Chell & Athayde, 2009). This tool perfectly fits the objectives of this research and is utilized during pre-test and post-test stages.

Through previous research the creators of the YISMT have identified the generic skills which underpin innovation and which the tool aims to measure (Table 6). Each variable is composed of a number of items identified by the authors of the instrument (Appendix II).

YISMT Variables

Variable	Description
Creativity	Imagination, connecting ideas, tackling and solving problems, curiosity
Self-efficacy	Self-belief, self-assurance, self-awareness, feelings of empowerment, social confidence
Energy	Drive, enthusiasm, motivation, hard work, persistence and commitment
Risk-propensity	A combination of risk tolerance and the ability to take calculated risks
Leadership	Vision and the ability to mobilize commitment

Table 6

Additionally, the authors of the instrument distinguish between different types of innovators. Respondents are asked to indicate how much they agree or disagree (on a scale of 1-7) with a series of statements about pursuing five different innovative

pathways: a social innovator, a cultural innovator, an economic entrepreneur, an inventor, and an innovative entrepreneur. If respondents score 7 (i.e. strongly agree) on any of the dependent variable statements (which measure future intentions towards an innovative career pathway), they are categorized as having a stronger intention to pursue an innovation pathway. If respondents do not score 7 on any of these statements, then they are categorized as having weaker intention of pursuing an innovation pathway (Chell & Athayde, 2009, p. 33).

Types of Future Innovator and Associated Dependent Variable

Type of Innovator	Statement of Future Intention to Be Innovative
Social Innovator	I intend to do something no one else has ever thought of before to bring about positive changes to society or the environment.
Cultural Innovator	I intend to design or create something new, such as in music, software, dance, TV or fashion.
Economic Entrepreneur	When I leave college I intend to spot opportunities to make a lot of money.
Inventor	I would like to invent something that is new to the world.
Innovative Entrepreneur	My ambition is to set up a successful company that offers something completely new.

Table 7

The YISMT aims to address a gap in educational assessment by offering a robust measure of young people's innovation skills. The research to develop the Tool aimed to (1) identify robustly the important components of innovative capability in young people; (2) demonstrate ways of revealing this capacity; (3) understand innovative behavior within secondary schools and sixth form colleges; and (4), where appropriate, identify any individual school or college initiatives that would promote the development of innovative attitudes and behavior.

Even though the YISMT has been piloted and tested in schools and six-form colleges with participants of the study being aged between 14-19 years old, the authors particularly emphasized that the tool is addressed to young people without major working experience. Moreover, the items of the tool focus only on personal generic abilities without making reference to any specific learning environment since the tool has been used at schools as well as at colleges. The authors stated:

> Innovation skills are generic and can be developed through science, arts and vocationally-oriented subjects, as well as through a wide range of extra-curricular activities. The Tool can be used as a benchmark to measure the impact of enterprise and innovation programs and initiatives (p.4).

5.4.2.2 Rubric for Data Assessment and the Use of Creativity Exercises

In this study rubric is used to assess pre-test and post-test exercises which evaluate innovation capacity of MBA students before and after attending the course designed for developing MEI competencies.

The exercise involving case-studies in this research consists in reading a case-study which presents a management problem related to business innovation (Appendix III). The case-studies are chosen in such a way in which they can be perfectly comparable to each other and thus, despite describing two different companies, can be equally used in pre-test and post-test.

The first case-study is about the Danish company Lego which produces children toys and, following some problems related to the costs of production, is transitioning itself into a strategy combining toys and digitalization. The second case-study is about a famous company Nintendo which is also related with toys and games, particularly, video games. Both case-studies are comparable in the following ways:

- Both case-studies describe the companies from the entertainment/game sector;
- Both case-studies provide an outline of the history of the company, explaining the challenges and problems it faced;
- Both case-studies describe the companies which are currently finding itself in transition towards considerable product innovation;
- Both case-studies provide an example of a company which is innovating by revolutionizing a user-experience. Lego – by offering an increasing variety of user configurable products in which users can modify or even design from scratch their own toys. Nintendo – by offering an innovative video game controller which enables the creation of games that mimic real-world movements like throwing, hitting, or aiming. In both cases, users and their new experiences are in the center of product innovation;

- Both case-studies describe the companies which came up with revolutionizing innovations within their corresponding market segments;

Further, the students are asked to answer the following questions:

1. Which kind of innovation do you find in this case study? Please identify process, products or services.
2. Which kind of process, services or products you consider sustainable for innovation based on this case study?
3. Which innovative ideas do you have for development of the company?
4. If you were innovation manager of this company what would you be doing? Please describe your actions and plans and ways of making your plans possible.
5. As innovation manager of this company, what skills you think you would need to have to be successful? Which of these skills you currently have? Which of these skills you don't have and hope to improve?

The first two questions are related directly to the situations described in each case study. However, they help to figure out whether a student understands what business innovation means and how he or she understands the innovation process. The third question aims at understanding the level of creativity of each student. The fourth question allows seeing what kind of innovative management techniques each student can suggest. Finally, the fifth question aims at evaluating whether a student has awareness of the skills and competencies needed for innovation and whether he or she has a personal awareness of having or not having these skills.

The students are not given any further explanations or tips on completing the assignment apart from these questions. The first question aims to define how the students understand business innovation before and after participating in the course (content); the second question measures the extent to which the students understand the management practice of innovation (innovativeness of management techniques taught); the third question contributes to the study of the creativity competence development as a results of the course (creativity); the forth question calls for solutions and innovative approaches (understanding of competencies needed for innovation); finally, the fifth

question assesses students' self-perception and awareness of personal capabilities needed for innovation and expectations/results from the course.

Each student's answer is rated by applying the Likert scale from 1 to 5, where 1 is a "Fail" – no answer is provided or the answer is not correct/ relevant to the question; 2 is "Poor" – an answer is provided but parts of it are not relevant; 3 is "Satisfactory" – an answer is provided, it is relevant but it is not developed in detail, the approach proposed is not innovative/creative; 4 is "Good" – an answer is provided in detail, it is relevant, but there is a room for improvement; 5 is "Excellent" – an answer is provided in detail, it is fully relevant to the question, the approach proposed is very creative.

Rubric for Data Assessment (Practical Exercises)

Indicator	**Measurement**				
	Fail 1	Poor 2	Satisfactory 3	Good 4	Excellent 5
Understanding of business innovation					
Understanding of the innovation process					
Creativeness of a solution proposed					
Innovativeness of management techniques proposed					
Awareness of personal soft-skills					
Overall level of assignment elaboration					
Overall level of adequacy of answers					

Table 8

The **creativity exercise** used in this study is adopted from Cheung et al. (2006) who proposed a series of creativity-measuring exercises which contain verbal divergent and drawing production tasks as well as alternate uses tests. These tasks require students, for example, to list all the uses of a newspaper that they could think of. Another example of the task is when the students have to list as many ideas as they can about effective ways of learning their major subjects, and ways of creating jobs in Hong Kong.

In this study the students are given a sheet of paper with several sets of parallel lines (Appendix IV). They are asked to supplement the lines by drawing something which would convert these lines into an image. The students should think of as many ideas as they can to get as many possible alterations of the lines and images.

The Rubric is used to assess the results of the creativity exercise. Each indicator in the rubric is rated by applying the Likert scale from 1 to 5, where 1 is "Very Poor"; 2

is “Poor”; 3 is “Satisfactory”; 4 is “Good”, and 5 is “Very good”. The following indicators are rated in the rubric when assessing the results of the creativity exercise:

- **Number of drawings** – a number of drawings a student came up with;
- **Relevance** – the extent to which the exercise was completed correctly;
- **Creativity** – the level of creativity approach applied to the drawings;
- **Elaboration** – the level of attention to detail in the drawings provided;
- **Number of the same drawings in both exercises** – measures the same/very similar drawings in pre-test and post-test creativity exercise;

5.4.2.3 Student Diaries

Similarly to Debreli (2011) in this study the diaries are used for the whole duration of the course to collect data related to students’ progress, self-perception of changes as a result of participation in the MBA course methodologically adjusted to innovation, feelings and thoughts as well as confidential feedback. It is communicated to students that the diaries should be as honest as possible with the purposes to improve the course in the future and under no circumstances affect their final grade. The students are asked to submit the diary after each class session. Because the main problems with using diaries as a data collection instrument are related to recording of the irrelevant information by the participants and lack of meaning in participants’ statements (Debreli, 2011), the students are asked to submit the diaries in a semi-structured format with the following categories:

1. What new have I learnt during this class session?
2. What this class session has made me think and feel?
3. Have I improved myself (my innovation capacity) as a result of this class session? In which way? If not, why?
4. Can I use in real life what I have learnt in this class session and where?
5. My suggestions for improvement of this class session would be…

The final entry of the diary is prepared by students in the following format:

1. What have I learnt during this course? What has especially impacted me?
2. How different have I become as a result of this course? What has changed in my mindset as a result of this course?

3. Please describe how you think the course has helped you to improve the following skills. If it didn't help, please describe why?
    - Creativity skills
    - Entrepreneurship skills
    - Understanding of Modern Technologies
    - Management of diversity
    - Soft skills such as Team-Building, Leadership and Communication
    - Change and risk management
4. My suggestions for improvement of this course would be….

5.5 Data Collection Procedure

5.5.1 Intervention Preparation

The preparation of an MBA course prototype design consisted in elaborating didactic units which included the methodologies believed to develop MEI competencies and as described above in the section 4.3.2. The preliminary MBA course design was then sent to the innovation experts by e-mail in order for them to get familiar with the course design in advance and before the interview. After that, face-to-face personal interviews were conducted with innovation experts upon prior appointment. The interviews were recorded and then transcribed.

5.5.2 Intervention Evaluation

The intervention was prepared for a group of 25 students enrolled during the academic year 2014-2015 in the MBA program at Global Business School Barcelona. Different data were collected based on the nature of the instrument applied and as described below:

- **Youth Innovation Skills Measurement Tool:** The questionnaires were distributed among participating students (in paper) in the beginning of the first class session and at the end of the last class session.
- **Pre-test – post-test creativity measuring exercise:** The exercise was distributed among participating students (in paper) in the middle of the first class session and together with the quantitative questionnaire during the last class session.

- **Pre-test – post-test exercise involving case-studies:** The first case study was sent to students by e-mail straight after the first class. The students were asked to complete the exercise before the second class as part of the homework and send their answers back in word document. The second case study was sent to students after the last class session; the students had a deadline of one week to send their answers back required as part of their homework.
- **Students' diaries:** The diaries were collected within one week after each class sessions and always before the next class session. The students were asked to write the diary as part of their homework after each class and send their diary each week to a specially designated for these purposes e-mail address.

5.6 Information Processing

5.6.1 Processing of the Interviews

The interviews conducted within the Phase 1 of the study were recorded and then transcribed. The qualitative data in English were then imported into the Qualitative Data Analysis Software – MAXQDA. Within the software the text codes were created according to the interview topics outlined in the Table 5. With the help of the software, the suggestions for course improvement and recommendations emerged and were then analyzed. After this comprehensive analysis and in accordance with the recommendations made by the experts, the initial didactic units which composed the preliminary course design were modified.

5.6.2 Processing of Data from YISMT Questionnaire

The quantitative data collected via YISMT questionnaires were entered into a database designed specifically for this study. Then the data were analyzed using the SPSS statistical software. The processing of these quantitative data was focused on descriptive analysis (mean, standard deviation) with the purpose to understand the sample characteristics; Psychometric analysis – which included scale internal consistency and reliability of scale dimensions by applying a Cronbach's alpha and factor structure and exploratory factor analysis which was performed for informative purposes only considering a small sample size that was not enough to obtain replicable

results (Costello and Osborne, 2005); Correlations – in order to identify the relationships between variables; Paired t-tests were performed in order to observe differences within each before-and-after pair of measurements following the recommendations of Winter (2013) who demonstrated that a paired t-test is feasible with extremely small Ns if the within-pair correlation is high; Mann-Whitney test was applied for the analysis which required the study of answers that included all possible options within one question.

5.6.3 Processing of Data from a Rubric (Case Studies)

The pre-test case study of each student was evaluated first without looking at the post-test case study of a particular student. Each student's answer was rated manually according to the rubric described in the section 5.4.2.2. by applying the Likert scale from 1 to 5, where 1 is a "Fail" – no answer is provided or the answer is not correct/relevant to the question. The data obtained were entered in a Microsoft Excel sheet. After the pre-test exercises of all students were evaluated, the evaluation of post-test cases studies began in a similar way. The data were entered in a different Microsoft Excel sheet. The means and change percentages were calculated by using a corresponding function within Microsoft Excel.

5.6.4 Processing of Data from a Rubric (Creativity Exercise)

The creativity exercises were evaluated according to the rubric described in the section 5.4.2.2. in three stages: 1) The number of drawings provided in pre-test exercise is calculated and the rest of the indicators of the rubric are rated by applying the Likert scale from 1 to 5; 2) The number of drawings provided in post-test exercise is calculated and the rest of the indicators of the rubric are rated by applying the Likert scale from 1 to 5; 3) The exercises completed by the same student in pre-test and post-test are compared and the number of the same/very similar drawings in both exercises is determined. All the data obtained were entered in a Microsoft Excel sheets. The means and change percentages were calculated by using a corresponding function within Microsoft Excel.

5.6.5 Processing of Data from the Student Diaries

The diaries were submitted by the students in Microsoft Word format as independent documents. This allowed for entering the diaries easily into the Qualitative Data Analysis Software – MAXQDA. Within the software the initial code was created which was based on the MEI competencies that the MBA course aimed to develop (course objectives described in the section 5.2.4):

- Creativity
- Entrepreneurship
- Understanding of Modern Technologies
- Improvement of Soft-Skills
- Coping with Diversity

Additionally, "Feedback from the Students" was added as an independent category within the initial code.

Each diary was read separately and, following the deductive approach of qualitative data analysis, new second-tier and third-tier categories were being added to the initial code. When all diaries were analyzed, the organized qualitative data were downloaded from MAXQDA in the format of Microsoft Excel sheets for each category. Each of these Excel sheets was then analyzed to discover the common tendencies within each category and the results were described.

5.7 Limitations of the Study

This research is conducted in the context of a classroom, which by its nature is characterized by huge complexity. Despite the use of a mixed methods research methodology with both qualitative and quantitative techniques for data analysis which allows complementing and amplifying the reality studied, the study presents several limitations which need to be outlined.

First of all, the characteristics of this study are not compatible with random sampling. From the quantitative point of view, it means that the sample in this study does not represent the target population – MBA students – without biases. It is important to note that this study is conducted in an international business school with

students representing different nationalities. The effect of nationality, speaking different languages, not living in a home country, and studying in a language which is not native, may cause some biases in the research.

Secondly, the initial small sample size of 25 students is an important limitation itself, however more cases are lost because of the pre-test – post-test research design (those students who complete pre-test but do not complete the post-test are excluded). Apart from that, a small sample size mean considerable limitations for the analysis of the data obtained from the YISMT questionnaire. A small sample size may affect the reliability of scale dimensions and it definitely affects the results of the factorial analyzes. Additionally, according to Hebel and McCarter (2012) the small sample size affects statistical significance in some cases.

Thirdly, there is no possibility to test a control group that would not be exposed to the intervention and to compare whether the results obtained are achieved only due to the participation in the MBA course or whether some other factors intervene and affect the results. The reason for not testing the control group consists in the fact that absolutely all MBA students without exception participate in the MBA course. There is no other MBA group of students at the business school where the investigation takes place. Because of the absence of the control group, it is important to observe that in parallel to the MBA course the students are also enrolled in other MBA courses in the period when this research is conducted. Particularly, according to the MBA curriculum design at the business school where the research takes place, the students are doing the following courses: marketing management, the government and legal environment of business, financial accounting, market research, and statistical analysis for management. Thus, the effect of innovation capacity improvement is attributed not only to the business innovation management course (this intervention) but to MBA education in general, including other MBA courses which the students are doing in parallel.

Finally, English is not a native language for the majority of the participants of the MBA course; there are only two participants for whom English is a native language. While all the participants are admitted to the MBA program in English and have a high level of this language, the fact that that the students need to write diaries in English may limit the level of self-expression which is usually higher when one writes in their native language.

6 ANALYSIS OF THE RESULTS

6.1 Design of the MBA Study Course

As outlined in the section 5.4.1.2 where the interview with experts is described as one of the instruments used in this study, the code for the analysis of the qualitative data obtained from the interviews with experts was organized in MAXQDA according to the interview indicators and consists in the following categories:

MAXQDA Code Used for the Analysis of the Qualitative Data (Interviews with Experts)

First Level MAXQDA Categories	Second and Third Level MAXQDA Emerged Categories
1) Coherence and Methodological Adjustment	
	Sequence (order) of didactic units
	Contents
	Activities and exercises
	Methodology • Modern Technologies • Soft-skills • Creativity • Attention to Diversity
2) MEI Competencies to Develop	
	Creativity competence
	Entrepreneurial mindset and entrepreneurial competence
	Understanding of modern technologies
	Soft skills
3) Final Project	
	Idea for the final project
	Steps for completing the final project
4) Final Evaluation	
	Approaches to final evaluation

Table 9

6.1.1 Coherence and Methodological Adjustment

With respect to sequence (order) of didactic units, the experts have suggested that the Didactic Units 2 "Entrepreneurship" and Didactic Unit 4 "Modern Technologies" have to be merged. This suggestion referred to the main recommendation related to reorganization of class days within didactic units. Thus, taking into account didactic objectives of the course, one of the experts suggested that the teaching of entrepreneurship has to be divided into two parts: *"first you give an overview of what entrepreneurship is and the link between innovation and creativity. After that the students have to choose the fields where they can apply the concept of entrepreneurship*

and check the probability of this concept to become viable" (Expert 4). As a result, the use of rapid prototyping tools and methodology planned within soft-skills didactic unit has been placed within entrepreneurship unit. The expert explained that the didactic objectives for teaching entrepreneurship should include not only understanding of entrepreneurship, but feeling entrepreneurship in motion, that is *"engaging in real testing process, trying and making errors, coming back, modifying, and looking to get new feedback"* (Expert 4). This modification and the final project proposal (described below) resulted in the fact of merging Didactic Unit 2 "Entrepreneurship" and Didactic Unit 4 "Modern Technologies" of preliminary course design (Appendix V). The deducting objectives itself for understanding modern technologies should include, according to the experts *"concentrating on the creative process of innovation, modern technologies, so that you are not just talking, but trying to do it"* (Expert 4). In general, the recommendation of experts was that it was pointless to teach either entrepreneurship or modern technologies without implementing learning-by-doing.

In terms of contents, the main suggestion was to include "Business Model Canvas" tool into teaching of entrepreneurship. Business Model Canvas is an essential tool for drafting business models of newly created products and services and understanding its weaknesses and strong points: *"After you test, you need to know the relation with user, the relation with your service, you need to know how to make your product scalable"* (Expert 4). Another important addition was to include the concept of branding into the course contents: *"Because we think visually, the brand brings a more sustainable cash flow, so before you sell you have to brand. By understanding branding, the students would understand design thinking for innovation, when you brand something and it results in a sustainable competitive advantage"*(Expert 1). The aspect of branding was included in Didactic Unit 1 as well as into a final project.

Activities and exercises were slightly modified with relation to testing process of entrepreneurship and newly added didactic objectives and contents. Thus, it was suggested that students should work on Business Model Canvas in class and considering the importance of this tool the class should take place in the form of a workshop similarly to the workshop with a practicing artist already included in the Didactic Unit 1 "Relationship between Innovation and Creativity".

The teaching of modern technologies, according to one of the experts, would be more efficient if a speaker from the modern technologies industry were brought into the class with the purpose of *"a student working with this person in class…which would oblige to go into the problem-solving or into the real case and the students would be stimulated to predispose their own behavior towards understanding the daily life of this person, the structure of the organization, management of their business and it is really important for the competencies that the students will learn*"(Expert 4).

The experts generally approved the methodology proposed, with few adjustments: despite the fact that the course should be of practical nature, the Expert 1 observed that there should be *"balance between practice and theory"* (Expert 1) meaning that *"when we teach practice to students we have to give them some theoretical articles too which would make them think in terms of not only just doing, it has to be balanced. The course should include the stimulation, reflection, writing stuff, because you forget about writing as you always do something… However, it is not only about doing, in business proposals you have to speak with more sophisticated concepts. Investors have got more sophisticated"* (Expert 1). As a result of this observation, it has been decided to add the development of writing skills within Didactic Unit 2 "Soft-Skills" and a compulsory submission of a final project written report. Another expert suggested that during the course it was important to work with emotions, to promote positive emotions in students *"because promoting the emotions is a very powerful motivator"* (Expert 3). The Expert 3 said that for creativity to be developed, it was very important to *"focus students' mind on emotions and not on costs".* In order to implement this recommendation, several exercises working with emotions were introduced as well as final project was focused primarily on emotions and not on costs.

With respect to attention to diversity, the experts didn't make any specific comments mentioning that activities and exercises proposed were quite interactive for everyone to participate and the diversity of the class (students of different nationalities) was a big advantage; however, the subject of space organization came into attention of one expert who emphasized that *"environment is important…it has to be open space so we can do creativity, the product development. Open space creates in students the feeling of freedom"* (Expert 1). He suggested that "boring" tables and chairs have to be removed from the classroom which was done during the classes which included

practical exercises – the participants were to work in the garden, or in a space without any furniture.

6.1.2 MEI Competencies to Develop

According to the opinion of experts, the preliminary design of the course was generally well suited for developing MEI competencies. Their comments included: *"In terms of inviting an artist to do some activities, to promote creativity I think it is a good idea. Why? Because it is novel, it is a new kind of way to do things…it is new in a business school and this could create an interest and adaptation so I think it is a good point"* (Expert 3); *"I mean what you are doing is an essence of what I have just said which is focusing on something, not thinking that this is impossible, whether we have money or not….forget about the rest and then there is a moment to think about this kind of things"*(Expert 3); *"A agree absolutely with* [listed MEI competencies] *because you have started with creativity, which is one of the main points. I don't think that anything else is missing"* (Expert 2).

Regarding the development of creativity competence, it was suggested that the class with a practicing artist should be focused on *"promotion of some product or the creative process of their* [students'] *own service… so the artist creates the process and delivers"* (Expert 4). As a result, it has been decided that the student would choose an event to promote, create graphic advertising of it (drawing, using creative materials) and then present it to the class. Another suggestion when working with creativity was about *"putting the students to work quickly and to prototype rapidly so try to create quick exercises where they put their creativity in action and discuss it between each other and the teacher becomes like a guide, someone who stands for making sure that they are getting into the right direction and who pushes them"* (Expert 2).

When discussing the development of entrepreneurial mindset and entrepreneurship competency in general, most of the experts made comments related to "opportunity recognition". Thus, Expert 1 said: "*The first thing is opportunity recognition and the second thing is exploitation. So we are spending so much time on exploitation, but what about understanding the opportunities?"* It goes along with an observation of another expert: *"Innovation comes from analyzing the user instead of starting with a new technology, which is a traditional thing of doing things like, for*

example, smartphones – how do we improve it, by adding more features or by making the camera with a higher quality? But this doesn't help to create disruptive innovation; however, if you start to analyze the needs of people, it becomes different" (Expert 2). Finally, there was an observation, that in order to promote the culture of entrepreneurship, it is important to *"keep commercializing it"* and not doing it for the sake of doing (Expert 1).

All experts agreed that in order to understand modern technologies learning-by-doing methodology is needed and continuous explosion to modern technologies. Thus Expert 2 said: *"It is important to give them* [the students] *a challenge which might seem impossible for them because it is a way of improving your experience but also getting into technology"*. Another expert observed that in order for students to understand modern technologies, they need to be exposed to them, he suggested that the use of lean management techniques was important: *"Lean management is to plan some activities in order to test things in a cheap way. What do I mean? You need continuation with the product. You don't need to develop the whole product to see if the market will accept it or not. You can develop first a prototype and then test it, it is not so costly and there is no risk whether the market will accept it or not"* (Expert 3).

As noted above, with respect to soft-skills development, the experts observed that writing skills/written communication were also very important. All experts agreed that the course should promote a high-extent of teamwork in order to develop teamwork abilities and leadership capacity.

6.1.3 Final Project

The initial idea for the Final Project within the course was that the students should find a real organization, approach its staff and suggest changes related to technologies according to the needs of this organization. However, the experts noted that ten weeks over which the course is delivered would not be enough for this kind of project, so they recommended reassessing the initial idea. Further, the experts suggested that in order to meet the didactic objectives of the course the project should deal not only with modern technologies but be a point of interconnection of the development of all MEI competencies and should include components which would help the students to develop the competencies of creativity, entrepreneurship, soft-skills, and modern

technologies: "*The project should be about something related to creativity but also related to business*" (Expert 4); "*The project should give the students a bigger picture, it should be a real case so that the students could understand all the processes and then extrapolate them*" (Expert 4); All experts agreed that the project should be made in groups "*because a group creates dynamic attitude and also helps overcoming stereotypes*" (Expert 4).

Taking these and other recommendations in mind, it has been decided that the Final Project would constitute a central part of this MBA course. The work on the Final Project would start from the class three and some class sessions would be dedicated to working on the project in class covering some of the contents such as for example Business Model Canvas.

The assignment for the Final Project is the following: development of the real mobile application which would represent a start-up business.

The steps for completing the project include recommendations of the experts for developing different MEI competencies (as outlined above) and are the following:

1. Groups are assigned by the instructor. The main criteria for the group assignment is diversity which, taking into account that the students are coming from different countries of the world, means that there should not be students of the same nationality in the same group. This way the MEI competency "Coping with diversity" is assessed;
2. Research user needs (opportunity recognition as suggested by the experts for developing entrepreneurship);
3. Conduct interviews with users in order to understand better the market opportunity: *"Instead of doing surveys, we do interviews but these are not the interviews when you are taking my answers as the information you will use but it is interviewing in a way which tries to read your subconscious mind through the language"* (Expert 2)*;*
4. Come up with an idea for a mobile application which addresses users' needs (creativity);
5. Develop an idea into a clearly articulated business model by using Business Model Canvas (entrepreneurship);

6. Create a prototype and test your business model on some users, look for ways of commercializing the project (entrepreneurship);
7. Think how to brand a new mobile application - name, logo, image - (branding as suggested by one expert should be included into the contents of the course);
8. Meet the modern technologies expert from the mobile application industry, listen to their story and advice and ask questions related to your application (invitation of a speaker from the modern technologies industry as suggested by an expert);
9. *"Emotions is a powerful motivator"*(Expert 3) – the speaker tells the students that if their application proves to be successful it will be possible to try to sell it to a big technological company;
10. Prepare a promotional video of your mobile application;
11. Submit a written report explaining the idea and the business model behind your mobile application (writing skills – soft skills);

6.1.4 Final Evaluation

The experts suggested different ways of evaluating the students keeping in mind that a certain balance between traditional grade was needed in order for the students to be responsible for the homework and a final project within the course and thus for the course to produce a better result and the fact that evaluation (grading) pressure should not affect the students' creativity development or create any fear or limitations (which as literature review shows affects the creativity enhancement (e.g. Heinonen and Poikkijoki, 2006).

When approaching the evaluation of this course, Expert 1 suggested using negotiation with the students: "*If the students are doing an amazing work, I am going to do an easy exam or no exam at all. This motivates the students because I found out the students work harder if they know there is an opportunity to avoid examination*". Expert 2 shared the practice of asking all students to evaluate each other using the instrument Elevator Pitch which asks to evaluate various aspects on 1 to 5 scale "*because they listen better and they are more conscious of what the mates are saying*": "*I ask them to give their feedback to each other, anonymously if they want, because it is not the same if you get feedback from the teachers or if you get feedback from your class mates*".

Expert 3 also suggested a similar practice: "*One thing I am doing is that one group presents and another group evaluates them. This evaluation is quantitative and is added to the part of the final grade. It was good for them and I was promoting the interest in listening to each other*".

As a result of these recommendations, the evaluation of the students has the following structure:

- **Participation and attendance:** The course is designed in such a way where participation plays a crucial role. The course is primarily based on role games, practical exercises and presentations and not traditional lectures. Students who do not participate or miss many lectures will not be able to pass the course. Participation and attendance accounts for 25% of the final grade.
- **Homework:** All homework need to be submitted on time. For a homework submitted later than a deadline date, 40% of grade will be deducted; however, if the homework is submitted on time, a maximum grade is received. Submission of homework accounts for 25% of the final grade.
- **Personal Journal:** Personal journal represents a process of reflection and is important for achieving the objectives of this course. The students are required to submit the journal entries each week before the next class in Word format (one entry after another). For journals submitted later than a deadline, 40% of grade will be deducted; for journal entries submitted on time a maximum grade is received. Submission of a personal journal accounts for 25 % of the final grade.
- **Group Project:** Group project are developed during the course and the students are reviewing it during the classes. It is important to establish a schedule of completing a group project in order to meet several deadlines. The group project accounts for 25% of the final grade, however the students are evaluated by instructor, external experts and the classmates.

It has been decided that each of the components entitled for evaluation would receive equal percentage parts in the total grade because this way the students would not

concentrate their attention only on one aspect of the course which has the highest weight. Further to that, the final project is evaluated by classmates who have to assess each group on the basis of 1) Clarity of presentation 2) Innovativeness of business idea 3) Presentation skills on the scale from 1 to 5 (following the advice of experts) – the feedback from the classmates is then shared within the students.

6.1.5 Validated Didactic Units of the MBA Study Course

Below are the validated deducting units which were modified following the recommendations of experts. The preliminary course design can be found in Appendix V. The didactic units below represent the final design of the MBA study course.

Didactic Unit 1: Relationship between Innovation and Creativity

Subject	Number/Didactic Unit	Title
Business Innovation Management	1	Relationship between Innovation and Creativity

1. Introduction
A nature of the course is explained to the students as well as its importance – the role of innovation in the modern economy and for a career of a business professional. The students are focusing on practicing creativity rather than engaging intellectually with creativity.

2. Didactic Objectives	3. Evaluation Criteria
1. To develop the creative capacity of students	1. Thinks out of the box, presents new ideas and finds solutions to creative exercises
2. To acquaint the students to one another	2. Shares own experiences, demonstrates curiosity towards group members
3. To eliminate the barriers between the participants	3. Expresses freely and fluently, communicates with the group and the instructor, openly suggests ideas and solutions
4. To heighten alertness towards new things	4. Clearly describes the impression, feelings about new experiences
5. To assess students in their self-discovery knowledge through the process of reflection	5. Demonstrates personal discoveries in relation to the material and exercises presented
6. To understand the importance of creativity in business innovation	6. Provides practical examples of creativity in business solutions

4. Contents
- Innovation in the modern economy. - Relationship between innovation and creativity. - Telling of a self-disclosing story from life where creativity was important. - Analogy between management and such fields as music, arts, health care, etc. - Creativity tools to generate initial ideas such as process of divergence: from brain writing to visual thinking tools, and more, SWOT, Crossed Brainstorming and Moodboards. - Presentation by an artist. - The concept of branding.

5. Activities and	MEI Competencies					
	Creativity	Entrepreneurship	Soft Skills	Understanding	Coping with	Change

Exercises				of Modern Technologies	Diversity	Management
1. Informal Course Presentation	X					
2. "Team-building" Activity*	X	X			X	
3. Self-disclosing Stories	X				X	
4. Creativity exercises to generate initial ideas	X				X	
5. "Creative Mindworks" Project (Homework)*	X					
6. Personal Journal to Capture Insights and Thoughts (Homework)	X	X	X			
7. Case Study on Innovation	X		X			
8. "Creativity Stream" with a practicing artist *	X					

* Appendix VI

6. Methodology
- Establishing a non-threatening and supportive environment as only in this type of environment creativity can be enhanced and creating a friendly and sincere atmosphere. - Positive management education for enhancing creativity though brainstorming techniques and creativity exercises in groups. - Team Work. - Reflection on materials of the course and activating creativity ability through personal notes in writing. - Stimulation of creativity by means of finding innovative and inspiring ideas. - Engaging with creativity through practice of drawing, composing, etc. - Using field work and new experiences to heighten alertness.

7. Attention to Diversity
- Stimulating and encouraging more shy students through active involvement and dialogue. - Assistance during team work to notice less active participants and help them to get engaged. - Creating groups randomly to make sure that people of different nationalities and backgrounds work together.

8. Organization of Space and Resources
- Informal cloths wear by an instructor in order to create informal atmosphere. - Organization of classroom space in a way that facilitates team work and discussion. - Creative workshops materials including paint, paper, pencils, etc. (session with a practicing artist). - Colorful stickers, paper and pencils for creativity stimulating exercises and Team Building Activity

9. Evaluation Procedure	10. Evaluation Instruments
- Systematic observation of class participation, questions, and team work - Dialogue with students to determine the level of awareness of the concepts discussed - Analysis of personal course journals - Relativeness of solutions found in creative exercises - Analysis of homework	- Written observations in class - Notes about conversations with students during and after the class - Personal class journals of students - Submitted written assignments - The measures of creativity proposed by Cheung et.al. (2006)

11. Session Organization			
Contents	Activities	Duration	Schedule
Day 1			
Innovation in the Modern Economy	Informal Course Presentation	30 min	11.20-11.50
	Questionnaires and exercises of pre-test	30 min	11.50-12.20
Relationship between innovation and creativity. Telling of a self-disclosing story from life where creativity was important.	"Team-Building Activity"	50 min	12.20-13.10
Pre-test case study "Lego"	Presentation of Homework	5 min	13.10-13.15
Explanation of the meaning of the personal journal and guidelines	Presentation of Personal Journal	5 min	13.15-13.20
Day 2			
Presentation by an Artist Creativity tools to generate initial ideas such as process of divergence: from brain writing to visual thinking tools, and more, SWOT, Crossed Brainstorming and Moodboards.	"Creativity Stream" with a practicing artist	110 min	11.20-13.10
Analogy between management and such fields as music, arts, health care, etc.	Presentation of Homework	10 min	13.10-13.20

Didactic Unit 2: Entrepreneurship and Modern Technologies

Subject	Number/Didactic Unit	Title
Business Innovation Management	2	Entrepreneurship and Modern Technologies

1. Introduction
Students start working on developing their entrepreneurship competency. The purpose of these sessions is to help students to develop their identity as entrepreneurs, to explore their own motivation, personal confidence and resilience, personal ambition and goals. Students are asked to think critically and to assess their current understanding of entrepreneurial learning. At the same time the students are introduced to the concept of knowledge economy, its interconnection with innovation and modern technologies.

2. Didactic Objectives	3. Evaluation Criteria
1. To develop the entrepreneurial competency	1. Displays confidence about self-ability as an entrepreneur, shows logical steps in developing the entrepreneurial activity, comes up with real ideas for start-up companies
2. To understand what entrepreneurship is and its importance for the modern economy with examples of break-through products. Understand the link between creativity and entrepreneurship. Understand the importance of modern technologies in the process of innovation.	2. Understands what entrepreneurial activity consists in, why entrepreneurship is the engine for economy, which role modern technologies play in entrepreneurship and innovation
3. To enhance team-building skills, to work freely with interdisciplinary groups	3. Shows predisposition in working in teams, engages actively in teamwork, contributes to the teamwork, shares accumulated knowledge with people from other groups, listens actively to their comments
4. To refine and develop a business opportunity into a clearly articulated and commercially visible business concept. To develop an entrepreneurial mindset	4. Understands what it means to convert a business idea into practice and the steps involved in the process
5. To improve consciousness of self, congruence, commitment. Assess learning gaps and think critically	5. Demonstrates understanding of personal strength and weaknesses, comprehends self-limitations and shows willingness to improve
6. To develop ability to learn from another human	6. Shows curiosity, asks questions

4. Contents
- Meaning of entrepreneurship, its importance for the modern economy. - Developing an opportunity into a clearly articulated business concept, components involved, such as industry research, user needs, tendencies, etc. Testing Process. - Business Model Canvas - Success case studies and break-through products and services created by entrepreneurs. - Socio-cultural issues related to innovative products and services and the impact they caused in the world. - Use of break-through modern technologies. - Feasibility of the new concepts and reality check methodology. - Rapid prototyping tools (“Fail fast to succeed sooner”). - Video about start-ups and management issues. - Guest speakers presentations

5. Activities and Exercises	MEI Competencies					
	Creativity	Entrepreneurship	Soft Skills	Understanding of Modern Technologies	Coping with Diversity	Change Management
A symbol		X				

technique to understand the students' understanding of entrepreneurship*						
Discussion of what entrepreneurship is and what it means for each student		X				
Morning Carpet Activity (Heinonen and Poikkijoki, 2006)*		X	X		X	X
Work in teams to refine and develop a business idea	X	X	X		X	
Discussion about socio-cultural issues related to innovative products		X		X		
Discussion on assessing personal learning gaps and critical-thinking (in groups) Developing self-knowledge through reflection and feedback from others		X	X		X	
Discussion of Final Project related to break-through modern technologies	X	X	X	X	X	X
Class discussion about entrepreneurship, personal limits, wishes to change and improve, conclusions of work done		X	X			
Reading of a case study on modern technology and its discussion				X		
Q&A Session with guest speakers		X	X	X		X
Case study on Innovation and Modern Technologies	X		X	X		

* Appendix VI

6. Methodology
- Creating awareness of what entrepreneurship is through symbol technique. - Team Work. - Discussions in groups and in class. - Feedback from co-workers, personal assessment. - Reflection on materials of the course through personal notes in writing. - Learning-by-doing in final project/ Orientation Maturity Model - Learning through transference – from one human being watching another (guest speakers)

7. Attention to Diversity
- Stimulating and encouraging more shy students through active involvement and dialogue. - Assistance during team work to notice less active participants and help them to get engaged. - Creating groups randomly to make sure that people of different nationalities and backgrounds work together. - Helping students to discover themselves by asking questions.

8. Organization of Space and Resources
- Organization of classroom space in a way that facilitates team work and discussion. - Empty space in class for performance of some exercises. - Objects and toys for symbol technique. - Video player, speakers

9. Evaluation Procedure	10. Evaluation Instruments
- Systematic observation of class participation, questions, and team work - Dialogue with students to determine the level of awareness of the concepts discussed - Analysis of personal course journals - Relativeness of solutions found in exercises and level of engagement in class activities - Analysis of homework	- Written observations in class - Notes about conversations with students during and after the class - Personal class journals of students - Submitted written assignments

11. Session Organization			
Contents	Activities	Duration	Schedule
Day 3			
	Morning Carpet Activity	30 min	11.20-11.50
Business Model Canvas Workshop – Part 1: Developing an opportunity into a clearly articulated business concept, components involved, such as industry research, user needs, tendencies, etc. Testing Process. Video about start-ups and management issues.	Work in teams to understand what the process of innovation and entrepreneurship is by using Business Model Canvas	90 min.	11.50-13.20
Day 4			

Success case studies and break-through products and services created by entrepreneurs.	Presentation by a guest speaker – a successful entrepreneur Q&A Session with an entrepreneur	100 min.	11.20-13.00
Use of break-through modern technologies.	Discussion of Final Project related to break-through modern technologies	20 min.	13.00-13.20
Day 5			
Business Model Canvas Workshop – Part 2: Feasibility of the new concepts and reality check methodology. Rapid prototyping tools ("Fail fast to succeed sooner").	Work in teams developing the idea of the Final Project to understand what the process of innovation and entrepreneurship is by using Business Model Canvas	120 min.	11.20-13.20
Day 8			
	A symbol technique to understand the students' understanding of entrepreneurship; Discussion of what entrepreneurship is and what it means for each student;	30 min.	11.20-11.50
Success case studies and break-through products and services created by entrepreneurs.	Presentation by a guest speaker – a modern technologies expert Q&A Session with the expert related to final projects Discussion about socio-cultural issues related to innovative products	90 min.	11.50-13.20
Day 9			
Final Project Workshop – Last changes before final presentation Use of break-through modern technologies.	Discussion on assessing personal learning gaps and critical-thinking (in groups) Developing self-knowledge through reflection and feedback from others	120 min.	11.20-13.20
Post-test case study "Nintendo Revolution" Homework			

Didactic Unit 3: Soft Skills

Subject	Number/Didactic Unit	Title
Business Innovation Management	3	Soft-skills

1. Introduction
These sessions are dedicated to developing the soft skills of students, primarily leadership, communications (presentations and writing skills).

2. Didactic Objectives	3. Evaluation Criteria
1. To develop leadership capacity	1. Demonstrates initiative, shows confidence, ability to lead the group
2. To develop communication and listening skills	2. Listens with attention to other members, shows care towards other members, expresses and writes clearly
3. To learn presentation skills in unexpected circumstances	3. Ability to clearly report and present, prepare quickly for a presentation
4. To develop ability to act outside one's zone of comfort	4. Shows confidence, ability to find quick solutions

4. Contents
- Storytelling and how to face a challenging presentation

5. Activities and Exercises	MEI Competencies					
	Creativity	Entrepreneurship	Soft Skills	Understanding of Modern Technologies	Coping with Diversity	Change Management
Games from Blaszczynski and Green * (2012)			X		X	
Presenting on the unexpected subject – Aquarium Activity *			X		X	X
Summary of the benefits of the course: return/impact and desire.			X			
Final presentation of a group project			X			
Submission of the written report of the final project			X	X		

6. Methodology
- Reflection and learning assimilation - Active games simulating real life situations - Pushing the students outside of their zone of comfort - Class presentations

7. Attention to Diversity
- Stimulating and encouraging more shy students through active involvement and dialogue. - Assistance during team work to notice less active participants and help them to get engaged. - Creating groups randomly to make sure that people of different nationalities and backgrounds work together. - Helping students to discover themselves by asking questions.

8. Organization of Space and Resources
- Organization of classroom space in a way that facilitates team work and discussion. - Empty space in class for performance of some exercises. - Objects needed for performing games. - Presentation projector and laptop.

9. Evaluation Procedure	10. Evaluation Instruments
- Systematic observation of class participation, questions, and team work - Dialogue with students to determine the level of awareness of the concepts discussed - Analysis of personal course journals - Relativeness of solutions found in exercises and level of engagement in class activities - Analysis of homework	- Written observations in class - Notes about conversations with students during and after the class - Personal class journals of students - Submitted written assignments - Rubrics (checklists, role plays, logs)

11. Session Organization			
Contents	Activities	Duration	Schedule
Day 6			
	Games from Blaszczynski and Green	120 min	11.20-13.20
Day 7			
Storytelling and how to face a challenging presentation	Aquarium Activity	120 min.	11.20-13.20
Day 10			
	Final presentation of a group project and submission of a written report	90 min.	11.20-12.50
	Questionnaires and exercises of post-test	30 min.	12.50-13.20
Personal Diary Submission	Summary of the benefits of the course: return/impact and desire.		

6.2 Intervention Evaluation – YISMT Questionnaire

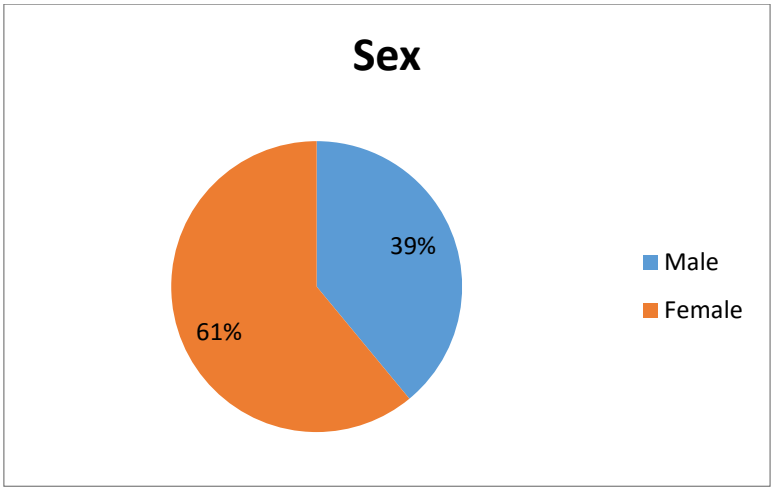
6.2.1 Valid Cases

Out of 25 students, one student did not complete the questionnaire in full and one student did not complete the post-test questionnaire. Thus, these two cases were excluded from the analysis and the total number of valid cases for YISMT Questionnaire is 23 students.

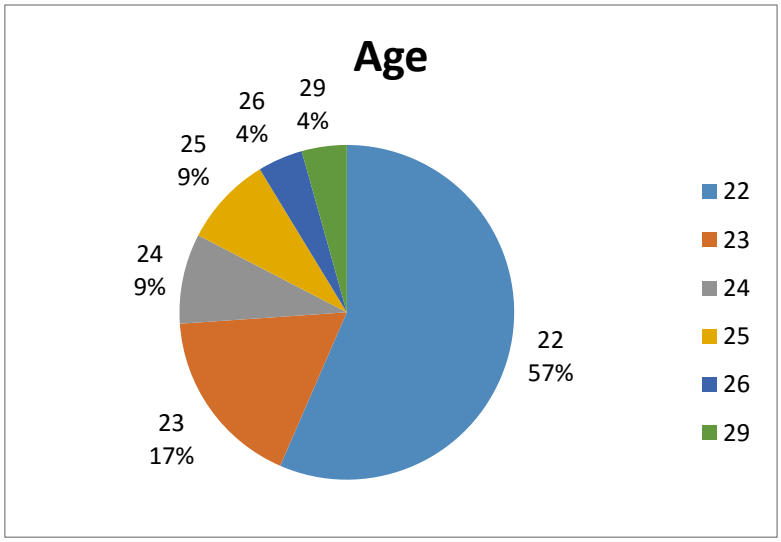
6.2.2 Descriptive Statistics

6.2.2.1 Socio-demographics

Out of 23 individuals, 39% are male (n = 9) and 61% are female (n = 14). Ages ranged between 22 and 29 years old (M = 23.08, sd = 1.75).



Graph1

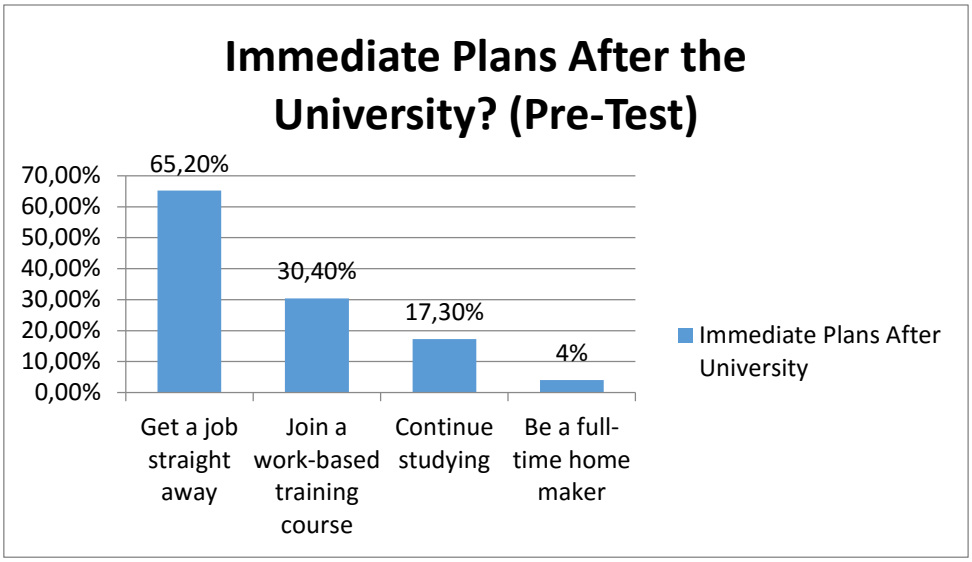


Graph 2

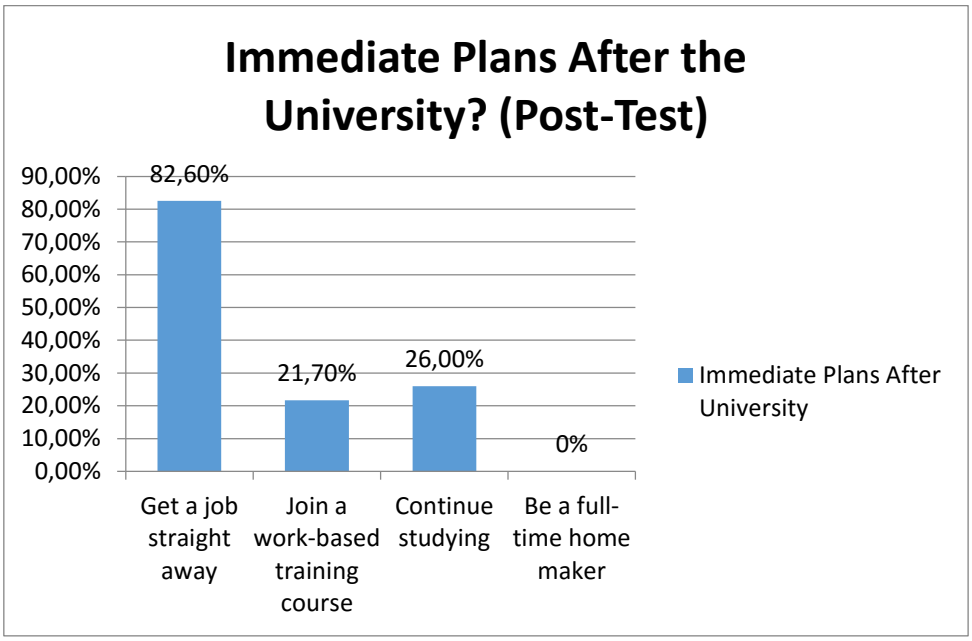
6.2.2.2 Attitudes towards Study and Work

The majority of the students (89,9%) were not planning to obtain an academic qualification higher than the master's level before taking the MBA course. Nevertheless, the number of students aspiring to obtain a PhD qualification increases after the completion of the MBA course from 13% (3 students) to 26% (6 students); this correlates with the data about the student's immediate future (i.e. after finishing university) and an option to continue studying where the increase is observed from 17% in pre-test (4 students) to 26% in post-test (6 students).

Regarding students' ambitions for their immediate future and other options, the vast majority hoped to find a job straight away (65%) in pre-test and (83%) in post-test. 30% of students in pre-test and 22% of students in post-test aimed to join a job-based training course (internship) and only a small minority hoped to become a full-time home maker (4%) before taking the MBA course.



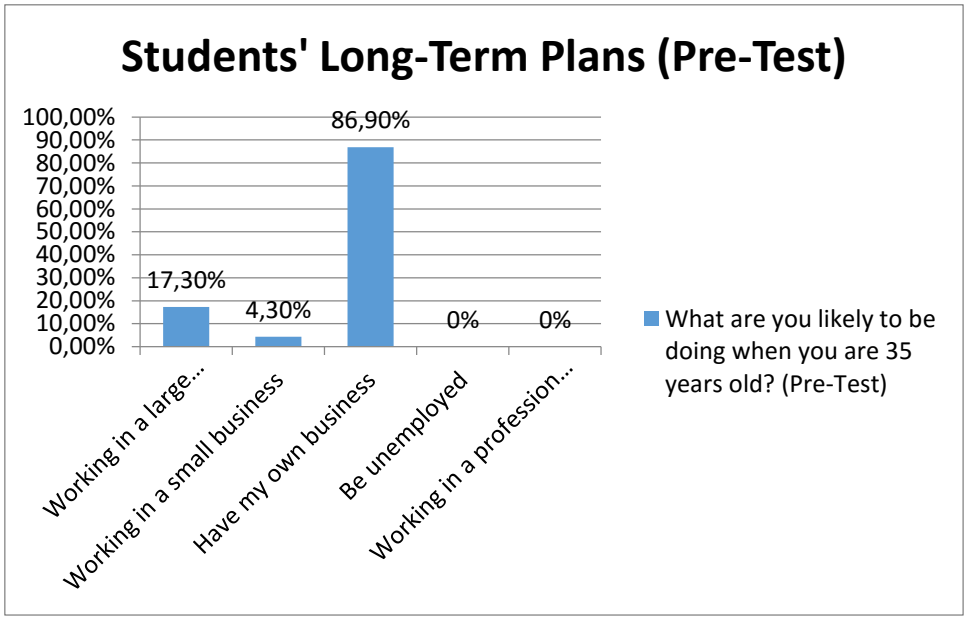
Graph 3



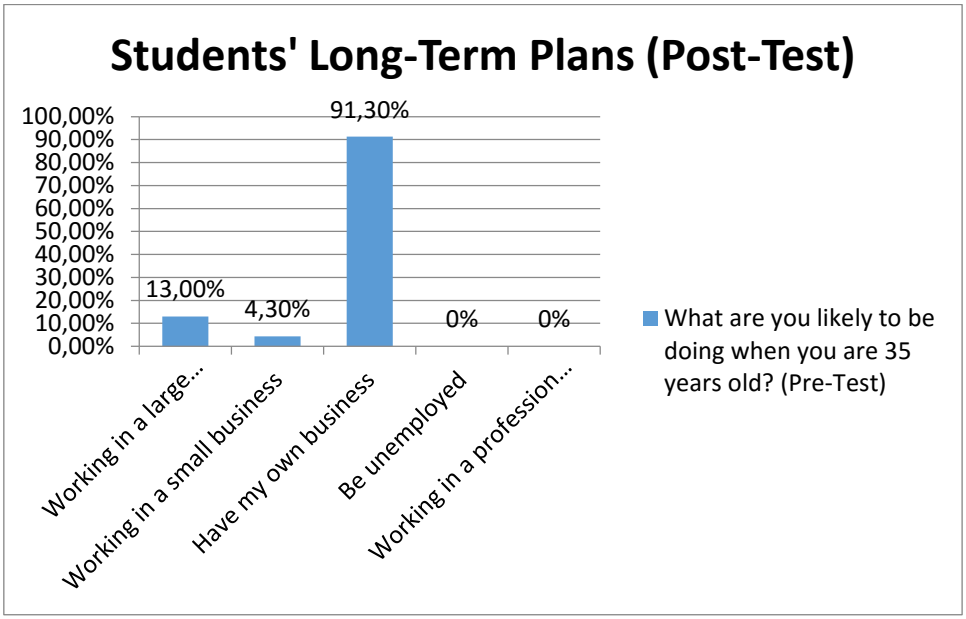
Graph 4

Regarding students' ambitions for their long-term future (i.e. when they are 35 years old), the percent of students who would like to work in a large organization decreases from 17% in pre-test to 13% in post-test with the vast majority of students (87%) in pre-test and (91%) in post-test aspiring to have their own business. Nobody indicated that they would like to be working in a profession (e.g. lawyer, doctor, etc.) This data indicate that the sample consists of students with entrepreneurial aspirations. This is also confirmed by the fact that to the question "Are you seriously considering

developing your own enterprise?" – 20 students in pre-test and 22 students in post-test answered "Yes".



Graph 5

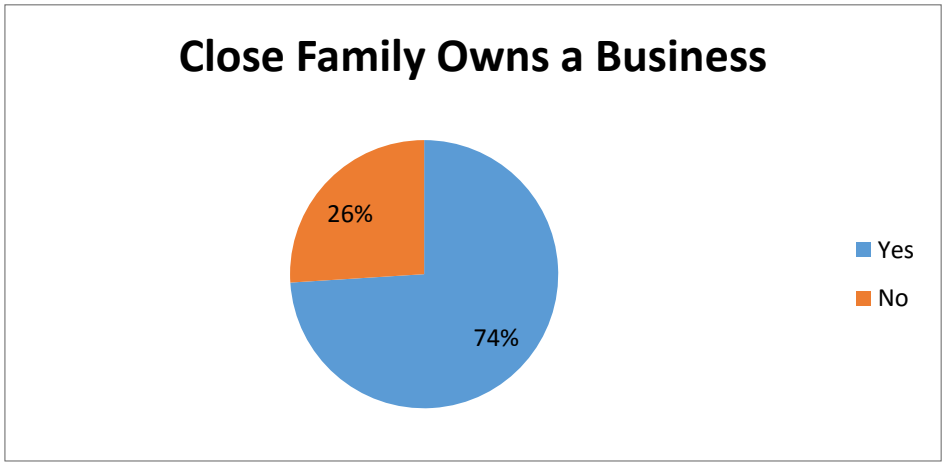


Graph 6

6.2.2.3 Entrepreneurial Background

Students were asked about their family entrepreneurial background and if someone from their family owed business. 74% (n=17) of the students reported that someone from their close family (mother, father or siblings) owned a business. 48% (n

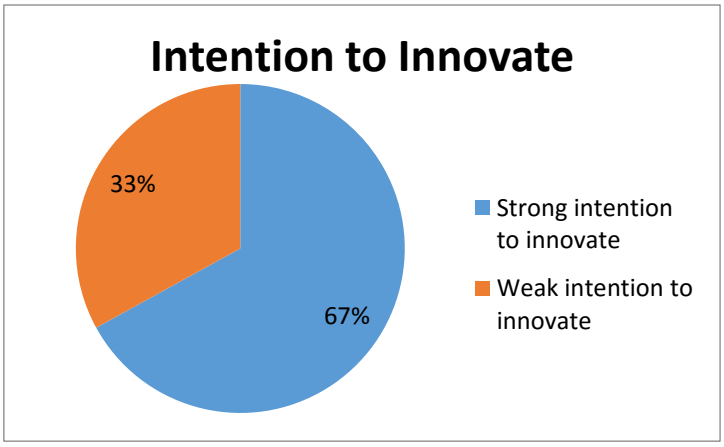
= 11) reported that someone from their extended family (grandparents, aunt or uncle, cousins and others) owned a business.



Graph 7

6.2.2.4 Type of Innovator and Intention to Innovate

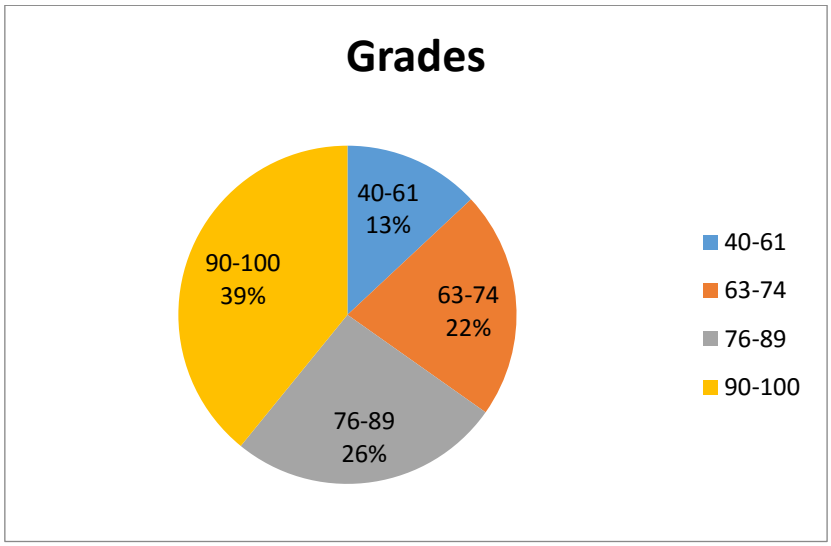
Regarding the types of innovator, the scale included 5 possibilities that were not mutually exclusive; this is, students could feel identified with more than one innovator type. The types were: social innovator, cultural innovator, economic entrepreneur, inventor, and innovative entrepreneur (Chell & Athayde, 2009). The scale ranged from 1 to 7, with 7 meaning the maximum identification with that specific type. The type of innovator is included in the questionnaire for the sole purpose of estimating the number of students with a strong intention to innovate and a number of students with a weak intention to innovate. There is no differentiation within the types for the objectives of this research. There were 7 students (30%) with a weaker innovation pathway (students who did not score 7 [i.e. strongly agree] on any of the dependent variable statements) and 16 students (67%) with a stronger innovation pathway.



Graph 8

6.2.2.5 Final Grades in the MBA Course

As described in the section 6.1.4, each student was evaluated and received a final grade from 1 to 100 as a result of participation in the MBA course. Overall, the final grades were satisfactory. The average score was 81% (sd = 16.345). The minimum grade obtained was 40 out of 100 and the maximum 100 out of 100.



Graph 9

6.2.3 Psychometric Analysis

The scale internal consistency was analyzed both in the pre-test and post-test conditions. This was done for the entire scale as well as for its sub-dimensions.

6.2.3.1 Scale Internal Consistency

Overall, the scale presented a very good reliability, with Cronbach's alpha of .75 in pre-test and .813. in post-test and reached the required threshold of 0.7 (Nunnally, 1978; Churchill, 1979).

6.2.3.2 Reliability of Scale Dimensions

The Cronbach's alpha was also calculated for the five individual dimensions both in pre-test and post-test period. Leadership, Self-efficacy and Creativity presented good reliability values both in pre-test and post-test, with alphas greater than .50 (α=.790; α=.532; and α=.591, respectively in pre-test) and (α=.815; α=.709; and α=.698, respectively in post-test). The dimensions of Risk-propensity and Energy did not yield satisfactory values (α=.205; and α=.157, respectively in pre-test) and (α=.004; and α=.195, respectively in post-test). However, this can be due to a small sample size. According to several studies the sample coefficient alpha obtained from larger samples tends to produce a more accurate estimate of the population coefficient alpha (e.g. Kline, 1986; Nunnally and Bernstein, 1994. Kline (1986) suggested a minimum sample size of 300; Segall (1994) called a sample size of 300 "small". Charter (2003) observed that low sample sizes alpha coefficients can be unstable.

Reliability of Scale Dimensions

Construct	Pre-Test Cronbach's Alpha	Post-Test Cronbach's Alpha
Leadership	**.790**	**.815**
Self-efficacy	**.532**	**.709**
Creativity	**.591**	**.698**
Risk-propensity	.205	.004
Energy	.157	.195

Table 10

6.2.4 Factor Structure

It is important to notice that small sample sizes seriously threaten the results of the factorial analyzes (e.g. Costello and Osborne, 2005). As Costello and Osborne (2005) explain, "EFA [exploratory factor analysis] is a large-sample procedure; generalizable or replicable results are unlikely if the sample is too small" (p.5). Their research demonstrates that only 10% of samples with the smallest subject-to-item ratios

(2:1) produced correct solutions while 70% in the largest (20:1) produced correct solutions. Further, the number of misclassified items was also significantly affected by sample size. Almost two of thirteen items on average were misclassified on the wrong factor in the smallest samples, whereas just over one item in every two analyses were misclassified in the largest samples. In this study, the subject-to-item ratio is even smaller than (2:1) considering 23 subjects and 51 items in the scale.

In this study, both factor analyzes were made for informative purposes only. It was decided to follow the dimensions found on the original validation study, given the supported appropriateness of the items to measure the latent constructs.

6.2.4.1 Exploratory Factor Analysis

An exploratory factor analysis was performed first. A total of 14 factors that explained 90% of variance were extracted (all factors with eigenvalues greater than 1). Appendix VIII contains the tables with the total variance explained and the component matrix.

6.2.4.2 Exploratory Factor Analysis Forcing the Extraction of Five Factors

A second factorial analysis was performed in order to understand how the scale behaved by forcing the extraction of five factors, similarly to the ones found in the original validation of YISMT Questionnaire. The five factors explain 56% of the variance, and all have eigenvalues greater than one. However, as predicated, because of the small sample size not all items correspond to the dimensions identified in the questionnaire. Appendix VIII contains the tables with the total variance explained and the component matrix.

6.2.5 Total Innovation Score (TIS)

Applying the original approach used by the authors of YISMT questionnaire, the items are grouped into factors which constitute the main instrument variables (Appendix II). Further, the mean and standard deviation are calculated for each factor in pre-test and post-test samples. Average scores are calculated by first summing scores of all statements in each subscale – Leadership, Self-efficacy, Creativity, Risk-propensity and Energy. A total innovation score (TIS) is calculated by adding sub-scale scores for each respondent and then finding a mean and standard deviation.

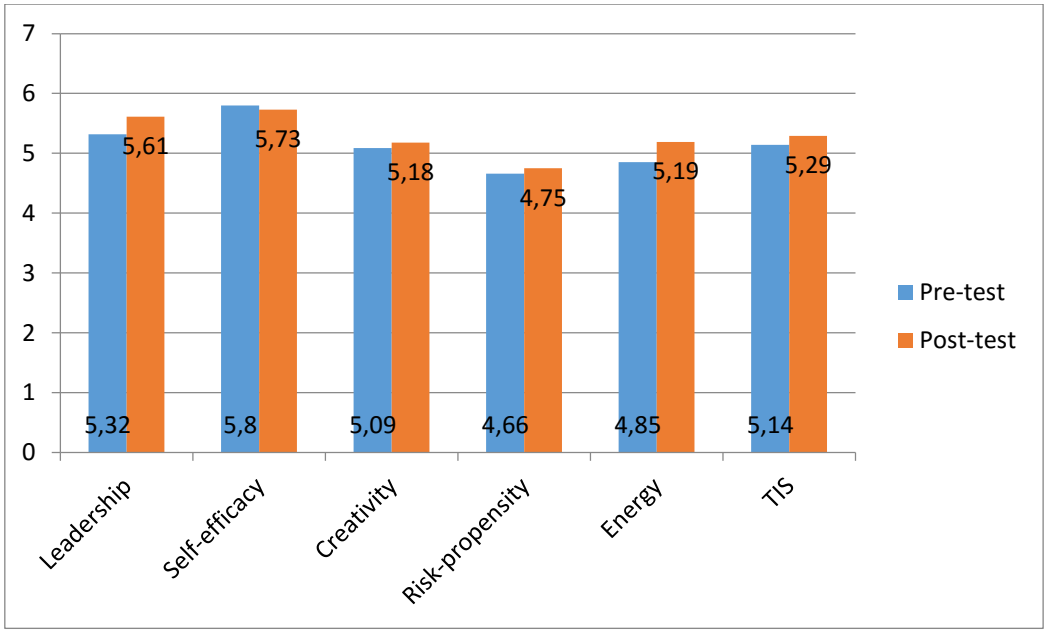
Table 11 presents a descriptive analysis of the evaluated YISMT variables at both pre-test and post-test stages.

Descriptive Analysis of YISMT Variables (N =23)

Variable	Mean		Std. Deviation	
	Pre-Test	Post-Test	Pre-Test	Post-Test
Leadership	5,32	5,61	0,73	0,65
Self-efficacy	5,80	5,73	0,37	0,50
Creativity	5,09	5,18	0,58	0,57
Risk-propensity	4,66	4,75	0,58	0,42
Energy	4,85	5,19	0,46	0,42
Total Innovation Score	**5,14**	**5,29**	**0,35**	**0,40**

Table 11

It is observed that the means have increased for all scale dimensions in post-test, except Self-efficacy (mean decreased from 5,80 in pre-test to 5,73 in post-test). As a result, the TIS increased from 5,14 to 5,29.



Graph 10: YISMT Pre-Test/Post-Test

To test for the effectiveness of the course, a paired-samples t-test was performed on the total innovation score before and after the administration of the MBA course.

A paired t-test in this analysis is performed following the recommendations of Winter (2013) who demonstrates that a paired t-test is feasible with small Ns if the within-pair correlation is high. The paired t-test calculates the difference within each

before-and-after pair of measurements, determines the mean of these changes, and reports whether this mean of the differences is statistically significant.

In case of TIS in pre-test and TIS in post-test the correlation of .583 was observed with p=0.003. There was a strong tendency towards statistical significance with respect to the increase of the total innovation scores (before the MBA course M=5.15, sd=.35; after the MBA course M=5.30, sd=.40); t(21)= -2,062 (p=0.051). As Hebel and McCarter (2012) write:

> Although arbitrary, the P value of 0.05 is almost universally regarded as catoff level for statistical significance. It should be taken only as a guideline, however, because with regard to statistical significance, a result with a P value of 0.051 is almost the same as one with P value of 0.049 (p.77).

The same authors write: "In the case of nonsignificant difference, the sample size is very important. This is because, with a small sample, the sampling error is likely to be large, and this often leads to a nonsignificant test even when the observed difference is caused by a real effect" (Hebel & McCarter, 2012, p.78). Abt (2010) shares the same opinion with respect to a p value of 0.051, he indicates:

> Technically, P-values of 0.049 and 0.051 would be on opposite sides of statistical significance, when, in fact, they are equivalent, and some have argued against this all or none phenomenon of statistical significance (p.118).

Murtaugh (2014) concludes the same:

> It is clear that a decision rule leading to very different interpretations of P values of 0.049 and 0.051 is not very rational. The prevalence of that view in the scientific literature is a fault not of the conceptual basis of hypothesis testing, but rather of practitioners adhering too rigidly to the suggestions of R. A. Fisher many decades ago (p.613).

Finally, Ziliak and McCloskey (2008) argue that "significance" should depend on context and researchers should stop playing the $p < 0.05$ game. They say that if 0.049 provides evidence, then 0.051 provides slightly less evidence rather than *no* evidence.

A paired-samples t-test controlling for the different dimensions of the scale was also performed. There was a significant increase of the scores of Leadership (before the course M=5.32, sd=.73; after the course M=5.61, sd=.65); t(21)= -2.107 (p=0.047); and

also of the scores of Energy (before the course M=4.85, sd=.46; after the course M=5.20, sd=.42); t(21)= --3.4348 (p=0.001). The paired samples correlations of these dimensions of the scale are also significant: Leadership pre-test & Leadership post-test pair has a correlation of .552 (p<0.05); Energy pre-test & Energy post-test pair has a correlation of .578 (p<0.05).

YISMT Variables – Significant Increase Experienced by All Students

YISMT Variables	(Significant Increase Experienced p<0.05)
Leadership	✓
Self-efficacy	×
Creativity	×
Risk-propensity	×
Energy	✓

Table 12

These results and the arguments provided by Hebel and McCarter (2012), Abt (2010) and other studies allow for accepting the hypothesis of this study:

After attending the MBA course methodologically adjusted to innovation the students will demonstrate improved innovation capacity and skills.

6.2.6 Variables Influencing TIS and the Dimensions of the Scale

Similarly to estimating the significance of increase/decrease of YISMT scale dimensions and TIS, a paired t-test is performed in all tests outlined below following the recommendations of Winter (2013) who demonstrates that a paired t-test is feasible with small Ns if the within-pair correlation is high.

6.2.6.1 Influence of the Entrepreneurial Background

Those individuals whose close family owned a business (N=17) experienced a significant increase on Energy levels (before the course M=4,7765, sd=.44; after the course M=5.14, sd=.39); t(16)= -3,172 (p=0.006).

For those individuals whose close family did not own a business (N=6), there was a significant increase in the TIS (before course M=5.29, sd=.49; after course M=5.60, sd=.34); t(5)= -3,058 (p=0.028); on their Energy scores (before the course M=5.07, sd=.51; after course M=5.37, sd=.51); t(5)= -4.108 (p=0.009); and on the Risk

propensity scores (before the course M=4.33, sd=.67; after course M=4.94, sd=.48); t(5)= -2.668 (p=0.044);

YISMT Variables – Significant Increase Experienced based on Family Background

YISMT Variables	Close Family Owns a Business (Significant Increase Experienced p<0.05)	
	YES	NO
Leadership	×	×
Self-efficacy	×	×
Creativity	×	×
Risk-propensity	×	✓
Energy	✓	✓
Total Innovation Score	×	✓

Table 13

6.2.6.2 Influence of the Intention to Innovate

Those students who possessed a strong intention to innovate before the MBA course was administered (N=17), experienced a significant increase on Energy levels (before the course M=4.67, sd=.39; after the course M=5.05, sd=.49); t(14)= -4.21 (p=0.01) and on TIS (before the course M=5.15, sd=.41; after the course M=5.34, sd=.34); t(14)= -2.54 (p=0.023). For those who did not have a strong intention to innovate at the beginning of the course (N=6), there was no significant increase in any of the dimensions.

YISMT Variables – Significant Increase Experienced based on Intention to Innovate

YISMT Variables	Strong Intention to Innovate (Significant Increase Experienced p<0.05)	
	YES	NO
Leadership	×	×
Self-efficacy	×	×
Creativity	×	×
Risk-propensity	×	×
Energy	✓	×
Total Innovation Score	✓	×

Table 14

6.2.6.3 Influence of the Final Grades in the MBA Course

The influence of the final grades on TIS was also relevant. For the purposes of the analysis, the sample was divided in two groups – those students who scored below average on the MBA course (less than 80% "below average") and those students who scored above (equal or more than 80% "above average"). Then the difference in TIS was compared before and after the MBA course. Those students who had good grades experienced a significant increase in their TIS (from 5.05 to 5.34, t(12)= -3,132, p = 0.009), whereas for those students who had lower grades the increase was not significant (from 5.25 to 5.32, t(12)= -,613, p = 5.67). This means that those students who worked harder during the MBA course increased significantly their total innovation score.

6.2.6.4 Factors Influencing Final Grades

Considering that the final grades the students obtained as a result of participation in the MBA course were relevant for their TIS and the high performance in the course meant that the students improved their innovation capacity, it was important to control for those factors which may influence the students' performance in the course.

Regarding external factors which influenced the final grades, a significant difference (t(21)= -3,132, p<0.05) was found between the students whose close families owned a business (M=75) from those students whose close families did not own a business (M=96).

There was also a significant difference (t(21)= 2,386, p<0.05) between those whose extended families owned businesses (M=88) from those whose extended families did not own a business (M=74).

These results indicate that belonging to a family that owns a business is not an indicative of better performance regarding the acquisition of MEI competencies.

6.2.7 Behavioral Changes Regarding Entrepreneurial Action

The students were asked if they seriously considered developing their own enterprise and if yes, what steps did they already take (e.g. sought support from family or friends, were exploring potential markets, among others). In order to understand if

the MBA course stimulated their behaviors / actions towards pursuing an entrepreneurial action, Mann-Whitney Test was performed for all possible actions. Results showed that, after the course was administered, there was a significant increase in looking for support from family or friends ($U= 186$, $p<0.05$) and exploring potential markets ($U= 163.5$, $p<0.05$).

Statistics - Mann-Whitney Test[a]

	Sought support from family or friends	Secured some funds	Worked on your ideas in your bedroom or other personal space	Got a group together to help take your idea forward	Working to a plan	Exploring potential markets	Found some customers/clients	Others
Mann-Whitney U	186,000	231,500	223,500	230,000	245,500	163,500	254,000	264,500
Wilcoxon W	462,000	507,500	499,500	506,000	521,500	439,500	530,000	540,500
Z	-2,113	-1,052	-1,029	-1,772	-,490	-2,583	-,427	,000
Asymp. Sig. (2-tailed)	**,035**	,293	,303	,076	,624	**,010**	,669	1,000

Table 15

***

The conclusions which are made based on the analysis of the quantitative data obtained from YISMT questionnaire are outlined below.

In general and despite a small sample size, the scale presented good reliability. The reliability analysis of the scale dimensions showed satisfactory reliability ($\alpha>.50$) to Leadership, Creativity and Self-efficacy.

As was expected and because of the small sample size (e.g. Costello and Osborne, 2005) exploratory factor analysis did not confirm the five factors found in the original scale validation study (Chell & Athayde, 2009). In this study 14 factors were extracted which explained over 90% of the variance. By forcing the scale to five factors, variance explained dropped to 56%.

The students in the sample come from a very entrepreneurial background. The majority of students (87%) in pre-test were aspiring to have their own business by the

age of 35. This can be explained by their family background (74% of the students reported that someone from their close family (mother, father or siblings) owned a business). Additionally, more than half of the students in the sample (67%) had a strong intention to innovate before the MBA course started.

Regarding the effectiveness of the course and testing the hypothesis of this study, the results allowed for accepting the hypothesis "After attending the MBA course methodologically adjusted to innovation the students will demonstrate improved innovation capacity and skills" because there was a strong tendency towards statistical significance with respect to the increase of the total innovation scores (TIS) before and after the MBA course was administered (before the MBA course M=5.15, sd=.35; after the MBA course M=5.30, sd=.40); t(21)= -2,062 (p=0.05). Especially, according to the results, the MBA course participants experienced significant improvement in their Leadership (defined as "vision and the ability to mobilize commitment" and Energy (defined as "drive, enthusiasm, motivation, hard work, persistence and commitment") levels. The grades the students obtained correspond to these results because the average grade the students received was 81 out of 100 which was achieved because of hard work, commitment with team work, and motivation to perform well in the course.

It was important to observe different patterns which might have influenced TIS. Thus, entrepreneurial background, intention to innovate, and final grades obtained as a result of participation, were considered.

With respect to students' entrepreneurial background, it was found that those students whose close family did not own a business, experienced a significant increase in the TIS (before course M=5.29, sd=.49; after course M=5.60, sd=.34); t(5)= -3,058 ($p<0.05$), as well as in their Energy and Risk-propensity scores. Risk-propensity is defined as "a combination of risk tolerance and the ability to take calculated risks" (Chell & Athayde, 2009). It can be explained that the students who were not exposed to risk in their families improved this ability as a result of participation in the MBA course. The students whose close family owned a business only experienced a significant increase in their leadership levels, which correlates with the dynamics of the whole group of students. These results indicate that the MBA course was efficient for both groups, but was particularly important for the personal development of the students that had no close contact to entrepreneurial activity through their close family.

With respect to intention to innovate, it was found that only the individuals who had a strong intention to innovate experienced a significant increase in their TIS levels, in contrast to the students who did not have a strong intention to innovate in the beginning of the course. Additionally, those who had a strong intention to innovate also experienced a significant increase in their Energy levels. These results indicate that those who had a strong intention to innovate also obtained more enthusiasm, motivation, and commitment during the MBA course, which in turn, helped them to obtain better TIS results. Thus, the MBA course was not really effective for the students who had a weaker intention of pursuing an innovation pathway; some other approaches and methodologies are needed for the individuals with weaker innovation intentions.

With respect to final grades and their influence on TIS, the result was quite obvious: those students who had good grades experienced a significant increase in their TIS (from 5.05 to 5.34, $t(12)= -3{,}132$, $p = 0.009$), meaning that the MBA course is only helpful when time and effort is dedicated to it. Those students who missed classes and did not fulfill all the course requirements did not experience a significant increase in their TIS. In this situation, it was important to ask: "What influences the final grades and what makes that some student perform better than the others?" There were differences between those students whose close families owned a business and those whose close families did not, in the sense that those students who came from entrepreneurial close families had significantly lower marks. One possible explanation for this unexpected result is that those who come from entrepreneurial close families may be overconfident regarding possessed knowledge on the matter; therefore study less or are less inclined to perform well in activities presented during the course. At the same time, those students whose extended families owned a business had significantly better marks than those whose extended family did not own a business. An explanation of this result could be that the students saw an example to follow in their extended family which motivated them to perform better in the MBA course.

Finally, it was also found that after the course was administered, students behaved differently regarding their endeavors to pursue an entrepreneurial action. More precisely, they increased their efforts to seek support from family and friends and to explore potential markets. Considering that other answer options included "securing funds" or "finding customers", it is natural that the students only thought support from

family and friends and started looking at potential markets because the course lasted only for ten weeks and not much more could have been done in this short time. Nevertheless, this result is important from the point of view that participation in the course activated in students the willingness to take entrepreneurial action. This also correlates with the fact that the students' Energy levels have increased significantly after the course, meaning that as a first step towards their innovation pathway they started to speak to their friends and families and look for opportunities available on the market.

6.3 Intervention Evaluation – Practical Exercises (Case Studies)

The students were asked to prepare and submit in writing the practical case studies (Appendix III). The explanation of why these two case-studies are comparable and in which aspects and why they can be used equally as a pre-test and a post-test is outlined in the section 5.4.2.2. The first case study (pre-test) was prepared and submitted by 19 students; the second case study (post-test) was prepared and submitted by 14 students. Nevertheless, only 12 students prepared both the first and the second case studies. Thus, in order to compare the progress as a result of the intervention, the rubric for data assessment was used to evaluate the works of only these 12 students.

Each student's answer is rated by applying the Likert scale from 1 to 5, where 1 is a "Fail" – no answer is provided or the answer is not correct/relevant to the question. The examples of the answers which received an evaluation of 1 are provided below:

- Which kind of process, services or products you consider sustainable for innovation based on this case study (understanding of innovation process).
- *"Based on this case study I consider process innovation more sustainable. In this case we can see that for customers it's more interesting to be involved in process than to be just a viewer. Some people were ready to go to Denmark. Very important moment in this type of innovation that you involve people who are really interested. Those people are not driven by financial reward but rather from intrinsic interest. As one of the team commented, 'They're going to talk to us about Legos, and they're going to pay us with Legos? ..... They actually want our opinion?' It doesn't get much better than that"* (Student 6).

- Which innovative ideas do you have for development of the company? (creativeness of a solution proposed)
- *"It is very important do not overdo with the creative approaches and be apart from religious and political points .As in January 2013 the company faced with difficulties, as was accused of racism by representatives of the Turkish community in Austria. They demanded to stop selling of one of the sets and publicly apologized for insulting the religious feelings of Muslims"* (Student 5).

In the first example, the answer is not correct – the student says that process innovation is more sustainable believing that process innovation means involving customers into a process. In the second example, the answer is not relevant: instead of proposing a creative solution, the student says that the company should stay apart from religious and political aspects and provides some facts from history.

2 is "Poor" – an answer is provided but parts of it are not relevant, as in the examples below:

- Which kind of process, services or products you consider sustainable for innovation based on this case study (understanding of innovation process).
- *"I consider that the process that is mentioned in this case study became not sustainable for innovation. Because, LEGO boosted innovation so much that it lost control of innovation. I think that it's not enough just to boost innovation, you have also got the boost the amount of focus and control. If you are in the toy industry you have to renew your product line every year and two. Although, I think that LEGO brick is successful and could be sustainable for innovation"* (Student 9).

- Which innovative ideas do you have for development of the company? (creativeness of a solution proposed)
- *"The only problem I noticed with the Nintendo is that they don't have many game titles or successive ones instead they change the platforms too soon. I think they should stick to a platform and develop more on to*

the same platform. Innovation is necessary but at the same time the product enhancement is also needed. They invent a platform, try it out in the market and if it fails they jump to a next one but I think if some of their products were given more time and development then it would have been a success" (Student 2).

In the first example, the student admits that a Lego brick is sustainable for innovation, however, she does not explain why; rather the discussion is made around what is not sustainable which is not relevant to the question. In the second example, a student proposes as a solution *"to stick to a platform and develop more on the same platform"*; however, this solution is not creative, no further explanation is provided; rather the student is talking about what a company is not doing right, which is not relevant to this question.

4 is "Good" – an answer is provided in detail, it is relevant, but there is a room for improvement, as in the examples below:

- Which kind of innovation do you find in this case study? Please identify process, products or services (understanding of business innovation).
- *"In this article we are studying the Danish company Lego, which is specialized on the production of toys. It's started working from the 1916, and has changed a lot from that time. Lego made many innovations, on its path to become a company, which everybody knows. First innovation was changing the material of their products. At first they were producing wooden furniture and toys, but after time passed, they started producing from the plastic. By 1959 the company had stopped making wooden toys and concentrated only on plastic bricks and other products. Another innovation of Lego company was involving customers in their production. With the help of their own customers, Lego started to produce toys, on the designs given by them"* (Student 4).

- If you were innovation manager of Nintendo what would you be doing? Please describe your actions and plans and ways of making your plans possible (innovativeness of management techniques proposed).

- *"I would be researching the interest in a children's tablet, examining competition, seeking out how Nintendo can make a tablet truly their own. I would encourage the engineers to develop prototypes and developers to create an interface and games. I would be working with the marketing team to establish a marketing plan and ad campaigns, as well as the overall appearance, colour of the product and packaging"* (Student 1).

In the first answer, the student shows an understanding of business innovation by giving examples of company evolvement through product innovation over time, however, he does not say specifically what kind of innovation he identifies in this case study, apart from mentioning that "*with the help of their own customers, Lego started to produce toys, on the designs given by them."* In the second example, the student clearly shows understanding of the importance of teamwork "*I would be working with the marketing team"*, the leadership abilities "*I would encourage the engineers"*, the student also knows what a *"prototype"* is in the innovation process, and what is the starting point in the innovation process *"researching the interest in a children's tablet"*; however, the student does not provide an overview of how to make all these plans possible.

5 is "Excellent" – an answer is provided in detail, it is fully relevant to the question, the approach proposed is very creative.

- Which kind of innovation do you find in this case study? Please identify process, products or services (understanding of business innovation).
- *"Product Innovation is a change in the products or services that the company offers. The Lego Company is marked by product innovation since 1930s when wooden furniture products were changed for toys. Followed by the change in the material used from wood to plastic in 1940s. The next major architectural product innovation was the set of interlocking bricks on a platform on which many products could be built Followed by adding wheels, figures and switching from one type of plastic to another. From there innovations include the Lego mosaic service, manuals for the building system based on interlocking bricks, Duplo, Lego Technic Builders, linking key film themes into the Lego, Mindstorms Robotic Invention System (RIS), the service or Lego Factory,*

Lego universe as a service. The Process innovation relates to changes in the ways in which products and services are delivered. The most significant process innovation is allowing outsiders to participate in the creative process by designing their own products with the help of online computer programs. This first started with the Lego Mosaic then progressed with the Lego Factory and the Mindstorms Robotic Invention System (RIS) simpler programming language. Lego Universe changed the way products are delivered too in its own sector. Position innovation includes changes in the context in which the products and services are framed and communicated like targeting and segmenting different markets such as creating Lego specifically made for girls, for boys or different age groups" (Student 10).

- If you were innovation manager of Lego what would you be doing? Please describe your actions and plans and ways of making your plans possible (innovativeness of management techniques proposed).
- *"As an innovation manager I would have to find a link between creativity and business and put them in a strategy. This will divide my job into two roles: (1) Coming up with ideas that can benefit the company and (2) checking if the ideas can be materialized. In order to test my ideas I will use the online network to see what existing customers think about the potential ideas and whether it will change their view of the company in any way. As Lego users feel very passionate about the traditional plastic Lego, the company cannot afford any drastic changes and can open an eco-friendly line rather than changing existing lines. In that new line it can offer customers Lego made from a environmentally friendly material such as wood along with a campaign showing support for the Global environment. This will plant a seed which potentially will support the company through the changing process. It will ensure that customers will not be turned away for such a reasons. In order to grow environmental interest in children the Lego game sites can be used by slowly incorporating environmental education in the game plot as well as environmental awareness facts through the websites. This will ensure the growth of an environmentally responsible generation securing the future*

> *sales of the Eco friendly lines. The line of adult orientated Lego objects for the home can consist of things such as bowls, vases, furniture. I plan of initially incorporating it with the Lego mosaic line as adults are already using the service to create "pictures" used as home décor. The open innovation strategy will play a major role here. The company will allow users to develop their own objects and then send the physical product to them. Once the company gets an idea of what objects adults are mostly interested in, it could develop its own line of Lego objects"* (Student 10).

In the first answer, the student clearly identifies the type of innovation, both product and process, and provides clear examples in detail. In the second answer, the student provides a structured outlook for her management plan, underlying the importance of creativity: "*I would have to find a link between creativity and business and put them in a strategy"*; importance of reflection and feedback: "*In order to test my ideas I will use the online network to see what existing customers think about the potential ideas"*; capacity to take decisions: "*I plan of initially incorporating it with the Lego mosaic line as adults are already using the service to create "pictures" used as home décor."*

After each student's answer was rated by applying the Likert scale, the means were calculated for 1) each student before and after the intervention; 2) each answer for the whole group of students before and after the intervention; 3) total mean for all students before and after the intervention; 4) percentage increase/decrease in evaluation after the intervention. The results are presented below:

Total Mean for Each Student and for the Whole Group of Students before and after the Intervention; Individual Increase/Decrease in Evaluation in % after the Intervention

	Pre-test	Post-test	% Increase/Decrease
Student 1	3,85	4,71	22%
Student 2	2,42	3,14	29%
Student 3	2,14	4	87%
Student 4	3,71	4,85	31%
Student 5	2,42	3,71	53%
Student 6	1,71	2,14	25%
Student 7	2,85	2,28	-20%
Student 8	2,28	2,85	25%
Student 9	2,85	4	40%
Student 10	5	5	0%
Student 11	2,57	3,85	50%

Student 12	2,14	1,85	-13%
Total Mean	2,83	3,53	25%

Table 16

Evaluation of Each Answer (Indicator) for the Whole Group of Students before and after the Intervention (Mean)

Indicators	Understanding of business innovation	Understanding of the innovation process	Creativeness of a solution proposed	Innovativeness of management techniques proposed	Awareness of personal soft-skills	Overall level of assignment elaboration	Overall level of adequacy of answers
Pre-test	3,08	2,75	2,5	2,33	2,91	3,08	3,16
Post-test	3,83	3,33	2,83	3,33	3,83	3,66	3,91
% Increase	24,3%	21%	13%	42%	31%	18%	23%

Table 17

As observed, almost all students, except from two, obtained a higher evaluation of their works in post-test, with the total mean increasing from 2,83 in pre-test to 3,53 in post-test (an increase of 25%); three students out of twelve have improved their results by 50% or higher.

The evaluation of each indicator separately (Table 17) for the whole group of students before and after the intervention also shows an increase in each indicator without an exception Especially, this increase is considerable in "Innovativeness of management techniques proposed" – 42% and "Awareness of Personal Soft-Skills" – 31%.

Appendix VII provides examples of answers of the students who considerably improved their evaluation in post-test, particularly of a Student 3 with an increase of 87% in the mean of post-test; of a Student 5 with an increase of 53% and of a Student 11 with an increase of 50%. These examples are provided in order to demonstrate in which way each of these students improved their results: this improvement comes from the increased quality of answers in post-test and a deeper understanding of different concepts as a result of participation in the MBA course.

The completion of the assignments based on the case-studies and the analysis of the results demonstrate that the MBA course helped the students to understand better the meaning of business innovation and the innovation process after an exposure to the related contents and materials during the classes; however, the answers provided by the students in post-test show that the students obtained a knowledge of understanding of

business innovation within real-situations, they learned how to structure and divide the innovation process into sub-categories and to provide an explanation of each of the independent processes. The same can be said about the indicator "Innovativeness of Management Techniques Proposed" where the increase was the highest in post-test – it can be suggested that the work on the Final Project during the MBA course and leaning-by-doing methodology helped the students to feel comfortable in real-life settings; thus, when presented with a real situation from a case-study, the students applied all the knowledge and the competencies learned during the MBA course in order to come up with a better solution. More importantly, as the post-test answers demonstrate, the students are aware of the competencies needed for a successful innovation management – they mention leadership, communication and other soft-skills. In general, a better understanding of different concepts within business innovation domain is also reflected in "Overall level of adequacy of answers" which increased in post-test along with the rest of the indicators.

The indicators "Creativeness of a Solution Proposed" and "Awareness of Personal Soft-Skills" are directly related with the competencies the MBA course aimed to develop. Creativity increased by 13% after the MBA course – this slight increase can be explained by two factors: 1) the students did not have much exposure to creativity-stimulating activities during the MBA course (only two class sessions were dedicated to creativity) or 2) the measure of creativity is subjective, in contrast to creativity exercise specifically designed to measure creativity (also used in this study and where the creativity measure is transformed into a quantitative measure). On the other hand, awareness of personal soft-skills increased considerably in post-test by 31%; The practice of soft-skills was extensive during the MBA course: by means of special soft-skills training, constant work in teams, and preparation of the presentations during the whole MBA course. This is well observed in the answers provided in the post-test case-study: the students know what qualities are needed to achieve the solution and they list the qualities they have related to soft-skills much more than they do it pre-test.

While the case-study exercise was introduced into the MBA course merely with the purpose of pre-test and post-test measurement and not specifically in order to develop any competency, it can be said that this exercise helped the students to learn an example of innovation within real-companies and to engage into a self-reflection

process by evaluating their own limits, skills, and weakness – all of which is positively impacting the development of the entrepreneurship capacity (Allio, 2005). Additionally, the post-test exercise was useful for the students because they could apply what they learned during the MBA course to a real-life situation.

6.4 Intervention Evaluation – Creativity Exercise

The students were asked to complete the creativity exercise (Appendix IV) as part of the creativity developing activities presented during the MBA course but also for the purpose of measuring the evolution of the creative capacity. A total of 21 students completed the pre-test creativity exercise and a total of 23 students completed the post-test creativity exercise. 19 students completed both pre-test and post-test creativity exercises and, similarly to the analysis of the practical exercises used in this study, only the exercises of students who completed both pre-test and post-test exercises are taken into the analysis in order to assess the results.

As in case of evaluating the case-studies, the rubric is used to evaluate the exercises. The exercises are evaluated in three stages: 1) The number of drawings provided in pre-test exercise is calculated and the rest of the indicators of the rubric are rated by applying the Likert scale from 1 to 5; 2) The number of drawings provided in post-test exercise is calculated and the rest of the indicators of the rubric are rated by applying the Likert scale from 1 to 5; 3) The exercises completed by the same student in pre-test and post-test are compared and the number of the same/very similar drawings in both exercises is determined.

The means of the results both in pre-test and post-test creativity exercises are provided below:

Evaluation of Each Indicator for the Whole Group of Students before and after the Intervention (Mean)

Indicators	Number of drawings	Relevance	Creativity	Elaboration	Number of the same drawings in both exercises
Pre-test	12	4,68	3,26	3,57	1,21
Post-test	14,57	4,21	3,26	3,57	
% Change	17%	- 0,11%	0%	0%	

Table 18

As seen from the Table 18, the average number of drawings provided by each student is growing from 12 drawings per student on average in pre-test to 14,57 drawings per each student in post-test, an increase of 17%. Nevertheless, "Relevance" – the extent to which the exercise was completed correctly is decreasing in post-test by 11%, despite the fact that the students are completing the exercise for the second time. More importantly, the mean of "Creativity" – the level of creativity approach applied to the drawings, and "Elaboration" – the level of attention to detail in the drawings provided, does not change from pre-test to post-test results and remains at 3,26 and 3,57 respectively.

The table below details the results of each student, and particularly, 1) increase/decrease in the number of drawings provided from pre-test to post-test; 2) increase/decrease in the mean evaluation of Relevance, Creativity, and Elaboration from pre-test to post-test; 3) Number of the same drawings in both exercises; 4) Number of new drawings in post-test exercise.

Evaluation of Each Student's Results in Pre-Test and Post-Test Creativity Exercises

Student	Increase/Decrease in the number of drawings from pre-test to post-test	Increase/Decrease in the Mean Evaluation of Relevance, Creativity, and Elaboration from pre-test to post-test	Number of the same drawings in both exercises	Number of new drawings in post-test
Student 1	-1	**15%**	0	12
Student 2	16	-200%	0	21
Student 3	14	**25%**	0	21
Student 4	-10	-75%	0	11
Student 5	7	0%	0	21
Student 6	3	-50%	0	7
Student 7	-5	**22%**	3	7
Student 8	-1	-29%	0	11
Student 9	12	**13%**	3	21
Student 10	9	**7%**	0	18
Student 11	1	**7%**	4	8
Student 12	-3	0%	3	7
Student 13	-9	0%	1	9
Student 14	8	-56%	0	25
Student 15	7	**8%**	3	12
Student 16	4	**27%**	2	15
Student 17	-2	-10%	2	6
Student 18	-6	0%	0	4
Student 19	5	-15%	2	18
Average	**2,57**	**-16%**	**1,21**	**13,36**

Table 19

As observed from the Table 19, 8 students of 19 provided fewer drawings in post-test creativity exercise in comparison with the pre-test creativity exercise. Nevertheless, the tendency is that the number of drawings increased on average by 2,57 per student in post-test exercise.

At the same time, the mean of the indicators rated by Likert scale of 7 students (36,84%) out of 19 decreased in the post-test exercise, while 8 students (42%) showed better results in post-test and 4 (21,05%) students did not have any change in the results from pre-test to post-test exercise. The average result is 16% worse than the one provided in pre-test.

Observing the results in more detail, 5 out of 8 students whose number of total drawing decreased from pre-test to post-test, showed improvement or no change in the mean of rubric indicators rated by Likert scale, which mean that the quality of drawings and the relevance improved or did not change. At the same time, 4 out of 7 students provided more drawings in the post-test but the quality of these drawings was lower than in their pre-test exercise. 5 students out of 7 whose results in the mean decreased, did not provide any of the drawings in the post-test which they had previously used in pre-test. To explain these results better, it is important to observe the number of new drawings in post-test. Surprisingly, all students without exception provided new drawings in post-test with 13,36 being an average number of new drawings per student. It can be seen that the students, on average, provided only 1,21 drawings in post-test which they had previously used in pre-test. These observations can indicate that considering the students were doing the exercise for the second time, they could learn and memorize some of the possible drawings; nevertheless, the number of new drawings they provide in the post-test increased considerably, all of which can mean a general increase in their creativity capacity. Despite the fact that the mean of the sum of Relevance/Creativity/Elaboration decrease in the post-test on average, there are 8 students out of 19 (42%) who showed a better result in the post-test, which may say that some students improved their creativity as a result of the MBA course (Table 16 demonstrates the results of the students who obtained an improved result in the post-test period).

It is also important to mention that in relation to “Relevance” – the extent to which the exercise was completed correctly – and its average decrease by 11% in post-

test, it can be said that the students were trying to provide a new creative solution to the exercise, different from pre-test. Particularly, they were drawing outside of the lines, connecting two and more lines together in order to provide one bigger drawing or connecting many lines in such a way which would compose several separate drawings but different from the requirements of the exercise. All of these solutions were rated negatively with respect to "Relevance" but it cannot be said that the students were not trying to find a solution in a creative manner. Nevertheless, because the students were connecting more than two lines together and sometimes providing one big drawing it was difficult to evaluate the creativeness based on the number of drawings nor to compare the result with pre-test, when the exercise was done correctly by more students. That is why following the rubric indicators in a strict sense, only the correct solutions were rated in post-test with respect to creativity.

To conclude, the analysis of the results from the data obtained from the creativity exercise demonstrates that, despite no obvious increase in the indicator of "Creativity" within a rubric evaluation, other considerations are needed in order to understand whether the students improved their creativity as a result of the MBA course. Firstly, is to take into account a limitation that in the post-test the same exercise was completed for the second time, which could make the students bored; additionally they already knew some of the solutions. Secondly, Cheung et al., (2006) proposed to use drawing production tasks as a way to develop creativity and not to measure it: the use of the same exercise for two times within the same group of individuals could have forced them to look for a new way to complete the exercise which is not necessarily a creative one directly or made them less motivated to complete the exercise correctly and in the best possible way. Nevertheless, better results in the completion of the post-test exercise achieved by 42% of the students suggests that there was an improvement in the creative capacity of some students, albeit the results for the whole group of students are not obvious and are difficult to interpret.

6.5 Intervention Evaluation – Student Diaries

The diaries were submitted by 21 students with a total of 152 diary entries; on average of 300 words each entry. Some students completed all ten entries (every week of the course); however, some of them submitted only a few diary entries (after some classes only). Nevertheless, all entries were included into the analysis.

The initial code (the first level) for the analysis of the qualitative data obtained from the diaries consists of the categories which constitute the management education for innovation competencies (MEI) covered during the MBA course and feedback from the students as a result of attending the MBA course, as outlined in the table below:

Initial Code (First Level) Used for the Analysis of the Qualitative Data

First Level Categories
1) Creative Capacity Development
2) Development of Entrepreneurial Capacity
3) Understanding of Modern Technologies
4) Improvement of Soft-Skills
5) Coping with Diversity
6) Feedback from the Students

Table 20

During the analysis of the qualitative data, other subsequent independent categories and sub-categories emerged. One main first-level category emerged and refers to the contents of the MBA course. The rest of the newly added categories are second-level categories which primarily refer to the MBA course didactic objectives and teaching methodologies used during the course and which help to achieve the development of MEI competencies. In their diaries the students are describing their thoughts about different educational techniques and methodologies which were part of the learning process, and thus, the analysis of the qualitative data is organized into the categories around which MEI competencies can be developed. The table below illustrates the final MAXQDA code for the analysis of the qualitative data. This table does not include third-level sub-categories which are outlined in the corresponding section of the analysis.

Final Code (First and Second Levels) Used for the Analysis of the Qualitative Data

First Level MAXQDA Categories	Second Level MAXQDA Emerged Categories
1) Creative Capacity Development	
(Teaching methodologies used during the course)	Establishment of Non-Threatening Environment as a Teaching Methodology to Develop Creativity
	Creativity Generating Tools and Exercises
	Creativity Stream with an Artist
	Personal Diaries as a Teaching Methodology to Develop Creativity
2) Development of Entrepreneurial Capacity	
(Teaching methodologies used during the course)	The Concept of Entrepreneurship
	Assessment of Personal Learning Gaps and Critical Thinking as a Teaching Methodology to Develop Entrepreneurial Capacity
	Development of Self-Knowledge Though

	Reflection and Feedback as a Teaching Methodology to Develop Entrepreneurial Capacity
	Final Project and Learning-by-Doing Methodology as a Teaching Methodology to Develop Entrepreneurial Capacity
	Learning through Transference and Success Case Studies as a Teaching Methodology to Develop Entrepreneurial Capacity
3) Understanding of Modern Technologies	
	None
4) Improvement of Soft-Skills	
(Didactic objectives and teaching methodologies used during the course)	Leadership Skills
	Communication Skills
	Teamwork Skills
	Games from Blaszczynski and Green (2012) as a Teaching Methodology for Improving Soft Skills
	Pushing the Students Outside their Comfort Zone as a Teaching Methodology for Improving Soft Skills
5) Coping with Diversity	
	None
6) Contents of the MBA Course (Emerged First-Level Category)	
	Innovation in the Modern Economy
	Relationship between Innovation and Creativity
	The Concept of Branding
	Developing an Opportunity and Rapid Prototyping Tools
	Business Model Canvas
	Storytelling and How to Face a Challenging Presentation
7) Feedback from Students	
	Expectations from the MBA Couse
	Difference with Traditional Education
	The Role of Instructors
	Suggestions
	Final Thoughts about the Course

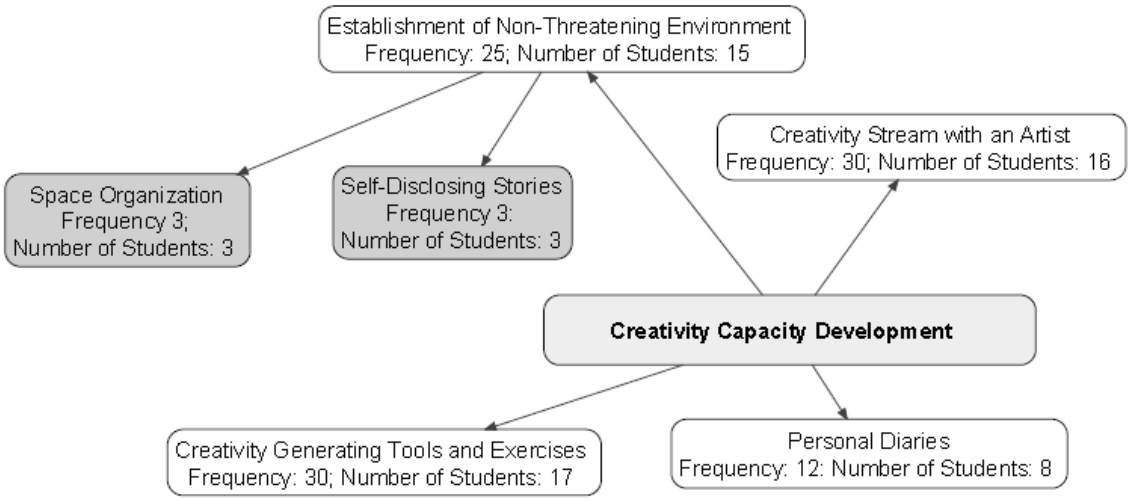
Table 21

The relevant episodes were extracted from the diaries in relation with each category or sub-category in order to demonstrate the results obtained with direct quotes of the participants. For the identification of the source of each quote, the unique numbers are used both for the participants as well as the location of text (according to MAXQDA). These numbers are provided after each extracted text separated by :, with the first number referring to the identification of a participant and the second number referring to the location of a text.

6.5.1 Creativity Capacity Development

Figure 14 outlines the relationships between categories and sub-categories of the analysis which constitute the first-level category "Creativity Capacity Development". The analysis is surrounded around second-level categories which emerged as a result of the analysis of the qualitative data. As seen from the Graph 11, the second-level category "Establishment of Non-Threatening Environment" has two emerged third-level sub-categories "Space Organization" and "Self-Disclosing Stories". Frequency in the figure indicates a total number of episodes within all entries in the students' diaries where this category appears; Number of students refers to the total number of students who are talking about this category in their diary.

Creativity Capacity Development: Units and Categories of Analysis



Graph11

6.5.1.1 Establishment of Non-Threatening Environment

One of the teaching methodologies for developing the creative capacity in students was establishing a non-threatening environment during classes. This approach is different to a formal learning environment which is usually imposed at lectures at University and, thus, the students' immediately felt it and shared their feelings in the diary. There is a total of 25 references to a special atmosphere during the classes, which means that this is something that really impacted the students. Thus, there are some episodes found in the diaries of the first week. As one student observes: *"I felt very excited, because the way our professor introduced herself and spoke to us. It was*

interesting and unexpected" (8:117). Sharing the experience of the first class, another student is also impressed by the way a professor welcomed her: "*I remember when I entered into the classroom (I was late), the professor shacked my hand strongly, exactly how it is supposed to be, because that is the first contact and it shows the person's character"* (3:326).

The exercises which were performed during the first class had an objective to break the ice and to create friendly atmosphere within the group so that each student could feel comfortable. The experience of students confirms that this objective has been achieved. Below are the observations of three students:

> *"...I felt myself very comfortable because of those exercises which we did. I started to feel that I am in a comfort zone. At the beginning when I didn't know all classmates I felt myself not comfortable. I thought maybe somebody didn't want to talk with me or something like that. But I realized that all people in our class are friendly and sociable."* 6:404

> *"...Then we had a short game where we split into two rows; stood facing each other and had to stare at each other's eyes till someone started smiling, this went on till everyone in the class had a chance to face every other person in the class. I'm guessing this was done to put everyone at ease and to get to know each other a bit."* 2:332

> *"...The first class of Business Innovation Management was exciting for me. It was not like a regular class. I really liked the format of the first class, specifically because all students could participate and take part in all tasks of the lesson."* 13:231

As the MBA course developed, the students continued expressing their feelings regarding the atmosphere in class; for example, many students mention that the class sessions made them feel more open and less shy: *"In our lesson we were completely free to express our feelings, ideas, business thinking."* Another student observes that the classes *"inspired me not to be afraid to be myself and express my opinion"* (14:300).

More importantly, the observations of students do confirm that the establishment of a non-threatening learning environment helps to develop their creative capacity. Thus, according to one student *"this method of education is an easy way to...create more ideas, not to be afraid to tell everybody your opinion, to brainstorm different possibilities of what we all can do together"* (9:148). The relaxed atmosphere in class made the students *"open to new thoughts about others"* (1:259) and made them think

"differently in non-academic way than any other class" (1:259). According to the students, the classes *"helped to switch on imagination, to act in a creative way and broaden one's mind"* (5:203). One student shared its satisfaction with the atmosphere in class, saying that *"the atmosphere affects the whole learning process, developing your creativity and innovative way of thinking"* (11:117).

How a non-threatening learning environment helps to develop the creative capacity is probably best described in the following episode:

> *"This informal way of teaching relaxes the tension in the students. In my case, my English is still not perfect, but when we were asked to present our idea in class, I had no trouble getting up and presenting our group project because I know that even if I make mistakes they will be understood and the reaction will probably be accompanied by a smile and this is one of the things that can really build confidence. Absence of the fear of failure creates an open learning environment that gives you much more ability to listen and learn from your mistakes…"* 15:567

The establishment of a non-threatening learning environment is closely associated with classroom **space organization**. Part of the MBA course, as recommended by the experts, was an informal space organization (e.g. creating an open space in the classroom by removing tables and chairs). However, only three episodes were found related to space organization experience during the MBA course. Thus, two students shared their satisfaction with the fact that the class session was held in the garden: *"It's really good that we work in the garden, because it has a relaxed and creative atmosphere, fresh air, more space and comfortable tables"* (14:141). Another student liked that *"class was very refreshing as it was held in the garden and had become one of my favorite sessions as its gets you very energetic from a sleepy morning"* (2:153). During the teamwork experience when the tables were organized into many huge tables and people were sitting around them, one student observed that *"our class looked like a huge workshop where everybody did something interesting and creative"* (16:94).

Self-disclosing stories as a teaching method are used to help eliminate the barriers between the participants and thus were introduced during the first session in order to break the ice within the students. The experience of students is positive:

> *"We did some exercises, where we worked in little group. Each group decided what creativity means for them. It was such a nice conversation. Was interesting to hear*

different opinions. It was clearly seen that people can have extremely different opinions even about ONE word." 6:275

Some students approached the experience of self-disclosing stories with business in mind and teamwork, however, it is seen that this experience helps students to start cooperating as a team:

"We spoke with each other, tried to know each other better to understand skills and abilities. It's interesting, because before starting a business, you need to create a team, so previously, you need to know about skills, interests etc. of each member." 14:240

"…as we can see the reaction of others on each or that situation, how unique and different we are in our thoughts, ideas, perception of life and at the same time helps to understand weather we can work in a team, if we can be flexible and listen others as well as if the point of view of other people is important for us." 5:808

6.5.1.2 Creativity Generating Tools and Exercises

The creativity generating exercises were met both with excitement and skepticism. Some students admitted that they were *"impressed with a new approach of presenting information and arranging a teaching process"* (5:808). Many students found exercises strange and unusual in the beginning as they were comparing the class with a traditional approach to education: *"Exercises which we did were so uncommon and unusual compared with normal classes. We used to listen to lectures and have discussions…"* (6:262). However, as the class session continued, the students realized the meaning of the exercises, as one student describes:

"I was really looking forward to what is to come in the class, which turned into skepticism once we started doing the exercises. Initially I saw it as not productive and immature and a waste of learning time…And then the class fell into place for me. My negative thoughts were only coming from exploring something I hadn't done before - It had forced me to step outside of my comfort zone. My previous educational experience only relates to impersonal lecture halls with over a hundred students. From there I came to value this class as an important tool of self-realization and progression. Innovation is all about taking an alternative route and it wouldn't take place if the same patterns were followed. Creativity I believe is born in the individual's emotions, thoughts and experiences, therefore the technique that was used, I think, was more effective than a lecturing one" 10:1220

The experience of other students demonstrates the power of brainstorming techniques in a team: *"When you stand in circle the energy is stronger and we can work better, the point is that we can have brainstorming and it is one of the most important*

parts while creating something new" (3:839). Another student believes that *"this class is a great example of the fact that we can break down the walls if we use a different way of communication, a creative one"* (15:204). There is also a confirmation that brainstorming is a way to bring out the best from everyone, as in these three observations below of three different students:

> *"The ideas were so different and unexpected. So it led me to believe that each of us is creative in his own way, everyone has own unique ideas, which can be applied in real life, in real business. The main thing is not to be afraid to say something that is not standard, maybe later it will become an innovation."* 8:436

> *"We tried to explain what innovation is, why we need it, why it is important to business today. All guys offered their ideas, they were strange, unique, funny, clever. Maybe in the future these ideas will become small parts of a big business."* 14:481

> *"I really liked to be a part of creative class because everyone thinks that almost everything is already made and discovered but I don't agree…Maybe we will be the ones who will create something completely new and exciting!"* 3:839

The exercises made the students realize *"what creativity and originality are"* (17:534). They generally state that *"the lessons like this are giving us the great opportunity to develop our creativity and fantasy"* (17:534). For example, one student during the process of self-reflection concludes that she *"gained awareness of* [her] *own behavior"* which she thinks is *"the first step to improvement"* (10:459):

> *"I have taken the consciousness I gained in the real world outside the class already by looking at myself from the side and observing the way I behave when interacting with other people and trying to think of newer ways to do things. If something is done in one way this is not necessary the right way and there is always room for innovation even in our everyday lives."* 10:459

Another student shares how the creativity generating exercises made him feel after the class: *"After the class, I was thinking about the meaning of the word creativity… and the classes like this help us* [students] *to develop it"* (4:585). This is not the only experience of how the exercises helped to influence the students' creative ability. Thus, another student shares how she started looking at different objects after the class and thinking of them in a creative way:

> *"…after this class I started thinking innovatively. For instance, I see a bottle and start thinking about how I can make it more innovative, how I can do this chair*

100% comfortable, how I can change this world as great people did by innovating." 18:715

Despite this positive influence of the creativity-generating exercises, some students were left with doubts. Since it was the first time they experienced a non-traditional learning environment, the students did not know what to do with that and how to approach their learning process:

"...this class gave me strange feelings, after that session I had some doubts on how I should learn this subject, and how I can develop my abilities, because I still have no idea how to use the information gained during the class session." 4:585

Others were openly looking for "a traditional content":

"...it would have been a very exciting class for me, if it wasn't so content empty. I got a little bit lost in terms of what exactly we were discussing and the direction which it was going towards. I appreciate the innovative methods used because they get the point across much easier and effectively but I wish they were used in a more structured context." 10:394

However, other students found some major takeaways from the exercises done, which confirms that the creativity-generating exercises fulfilled the objective with which they were introduced to the MBA course:

"I believe that one major take away point from this session is to always think outside of the box and challenge yourself to think differently on a daily basis. Changing up your routine can help create new innovative thoughts, which lead to innovative ideas and implementations in daily life." 19:292

6.5.1.3 Creativity Stream with an Artist

A practicing artist was invited to the second session of the MBA course in order to involve the students in the "Creativity Stream". The activity itself was unique for the students and there are no students who attended the second session and who would not share their experience of being part of the activity in their diary. Some students describe the nature of the activity:

"We were divided into five groups, and all had one mission: to come up with a theme for a music festival and the task: how to attract people to the festival. We got crayons, colored stickers, colorful paper, in order for us to make a poster for the festival." 17:794

It is interesting to observe the dynamics of the creative process from the perspective of the students, who admit that they *"tried to use all potential of* [their] *fantasy"* (17:794) and who *"started to live inside the idea and think how to implement it"* as well as *"believe in yourself and not to be afraid to express inner emotions and to transmit them during the process"* (5:683). The episode below describes what the process consisted in:

> *"We thought up different symbols of this music festival, such as when you enter the festival camp you can get a head of the horse as a symbol of the festival and make photos with it…I improved my creativity when we were thinking about the slogan, and I thought that it should be very impressive when you hear "Be Wild, Feel Freedom". So, this class session made me feel like an innovation manager of the event company, because I practiced very well and I liked it."* 9:644

Group dynamics and brainstorming (as in case of creativity-generating exercises) also play an important role in the process. According to the students the class *"took* [them] *through the brainstorming process"* and *"demonstrated how in a team every individual is given a task where creativity can be directed to"* (10:730). Furthermore, *"the class promoted the importance of having and creating an idea and not being afraid to show your position in front of the others"* (11:661). Many students admit that all *"ideas were unique and really very creative and different"* (8:416) and that the class helped them to improve the ability *"to deal with the strengths and weaknesses of others and accept their criticism without taking it personally"* (11:258). In fact, many students recognize that the class session made them think that all *"classmates are creative with a lot of fantastic ideas in mind"* (8:416), that they *"had a great time organizing the music festival with the team"* (16:557) and understood *"how important is to have good mates"* (16:557). As one of the students concludes:

> *"I understand that the class was a good example of brainstorming that produces new ideas and is strongly tied up with innovation management. In addition, I really appreciate teamwork, as the majority of bright ideas are born through discussion and the clash of different views."* 20:485

From the experience of the students, it is seen that time pressure was also an important factor. Thus, one student describes how overwhelmed she feels about creating an advertising campaign in such a short time:

> *"I improved my creativity. I had to think about something new for me in a short time period. It seemed like we were under some pressure. In these conditions we*

had our brains work better. That's why all of us did some advertising campaign in a short period of time. I've never thought that I can create a campaign." 6:322

Two other students share a similar opinion admitting that the activity made them feel *"under pressure to come up with ideas for the festival"* (1:392):

"I had to be creative in the group session and work with my team and offer direction. It made me think of all the components that form a large production and how everything must tie into the emotion that the group are aiming to emit. It also has to be practical and cost effective so I've had to think about that too." 1:392

"To sit down and come up with ideas, names and a message in such a short period of time was something really new to me. I think it has increased my innovation capacity." 2:245

Similarly to the experience with creativity-generating exercises, there were some students who found themselves resistant to the creativity process and who admitted that it was difficult for them to start thinking in a completely free way, they were looking for a traditional structured framework during the class. As one student recalls:

"I felt quite confused as to the objective of the storyboards as it was not clear from what prospective we were coming (advertising agency, customer of advertising agency?) I think that I just need to be less structured and go with the flow with the class but it is difficult for me!" 19:426

Another student recognizes that his skepticism later turned out into a clear understanding of the purpose of brainstorming:

"At the beginning I was disappointed because I didn't really understand what the purpose of the exercise was, but when you started to explain us what we should do I started to think about the importance of a message that you wanted to give us. My feeling was that I am a part of a creative team, because I started to imagine that I really worked for the organization that creates events and for me it was a good example of how we should work in groups and share our ideas between each other." 12:494

The feedback from the students regarding "Creativity Stream" with an artist demonstrates that the activity helped the students to activate the self-reflection process and to start thinking outside the box. Some students conclude that the activity helped them to understand that they *"should not be afraid to experiment"* (17:724):

"Our strict rules framework in which we set ourselves (how to behave and think) lead us to the fact that we reject good ideas that could contribute to the development of creativity…In this lesson, I realized that…if we want to create a

> *new original product or to solve the problem, it needs creativity, so our mind must be flexible. It is really cool to think outside the box, to switch from one thought to another, consider the idea from all sides, explore all new opportunities, see the most unimaginable opportunities."* 17:724

In general, the students admit that they improved their creative capacity as a result of the activity. Thus, one student summarizes that the activity helped her feel *"more confidence in* [her] *creative ability"* and make *"a step forward"* (5:164). Another student believes that thanks to this lesson, she *"became a little bit more creative and free"* and realized that she *"can do something interesting that people would appreciate".* As she recalls: "*I was very proud of myself and my team"* (16:338).

6.5.1.4 Personal Diaries

Student personal diaries were introduced not only with the purpose to collect data but also as a teaching methodology in order to create a space for students for self-reflection and self-discovery as a result of the learning process. This sub-category was not included in the initial MAXQDA code; however, the analysis of qualitative data demonstrated that the students shared their thoughts about writing a diary too. Unfortunately, nobody shared the opinion of whether writing a diary helped students to assess themselves better in their learning process. The only references to a diary are related to writing it as a requirement of the MBA course. A total of eight students shared their opinion about writing a diary as a compulsory course requirement, all of whom were dissatisfied with the experience. The students were emphasizing that they *"do not want to change anything"* (2:273) related to the MBA course experience other than writing a diary every week. Their argument was that *"the questions are not always relevant to what is happening in the class"* (15:231) and that the process of writing a diary is *"too boring"* (2:345):

> *"The lessons are delivered in such a special way and* [writing a diary] *is such a contrast because these questions are very schematic and actually make it harder for me to pass my experience from the classes."* 15:281

Another student believes that writing a diary is not *"appropriate for such class as the questions are irrelevant to the class."* In her opinion, *"it will be more beneficial to spend the time doing any other type of homework"* (10:394).

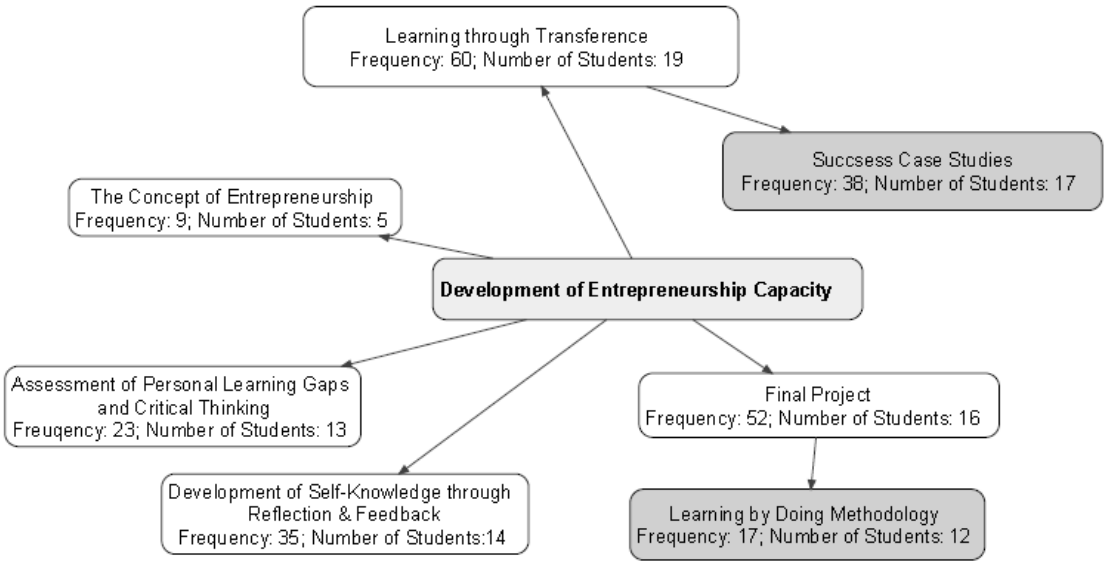
The main concern of students also comes from the amount of words required for each diary entry: *"I believe that 500 words for each summary is too much for a journal because I can express my thoughts more briefly"* (16:326). Some students suggest that it would be better to write a diary *"after 3 or 4 class sessions as it will be more appropriate": "In this case, we can better and more widely describe our sensations about the lesson"* (4:370). One student suggests that it would be nice to write a diary *"only in cases we are really impressed with the whole process, when we have something interesting in class"* (13:198). Finally, one student was concerned that he would not have anything to say in the coming diary entries:

> *"I'm clearly talking again about team work and creativity growth and I feel like I won't have anything more to say in the coming journals. It would be really helpful if you could change the format."* 2:280

6.5.2 Development of Entrepreneurship Capacity

The analysis of the impact the MBA course had on developing the entrepreneurship capacity of students, similarly to the analysis of the development of creativity capacity, is performed around the second-level categories which emerged as a result of the analysis. These categories represent the teaching methodologies and components included in the Didactic Unit 2 of the MBA course. The "Concept of Entrepreneurship" outlines the understanding of entrepreneurship as a phenomenon. While "Assessment of Personal Learning Gaps and Critical Thinking", "Development of Self-Knowledge through Reflection and Feedback" and "Learning through Transference" represent the teaching methodologies for developing the entrepreneurship capacity. Additionally, "Learning-by-doing" as a methodology successful for developing the entrepreneurship capacity is analyzed in the context of the Final Project within the MBA course.

Development of Entrepreneurship Capacity: Units and Categories of Analysis



Graph12

6.5.2.1 The Concept of Entrepreneurship

One of the MBA course objectives is not only to develop the entrepreneurial capacity but also for the students to understand what entrepreneurship is really about, to comprehend the concept of entrepreneurship. As the students' diaries suggest the MBA course helped the students understand the underpinnings of entrepreneurship and its components. One student expresses her satisfaction with the fact that the features of entrepreneurship "*each time are discussed*" in class:

> *"The entrepreneurship is a global process, which includes a lot of stages and we have to be aware of many specific features which during the class each time are discussed."* 5:282

She defines entrepreneurship in her diary as *"a spirit that is a personal attitude to create a start from something you like, desire and enjoy, which can bring you both material and internal satisfaction"* (5:502).

It is notable, that the students were not asked to provide definitions of entrepreneurship in their diaries; these definitions appear naturally as the students get to know the concept of entrepreneurship during the classes.

Additionally, the students describe in the diaries what exactly they learned about entrepreneurship, like, for example, that a successful business should start with a good business model:

> *"According to that video I have learnt that business plans usually don't survive the first customer contact, they fail. He tells us how organizations start approaching the challenge of designing business models in a radically new way. Companies learn to test their business models upfront, iterating on the feedback received from their clients, thereby reducing the risk of failure. So it could be more productive for entrepreneurs."* 9:636

The students admit that during the classes they *"got a lot of information about start-ups, how to write your business model in which way"* (9:152) and also that *"in any activity you should not be afraid to try, believe in your own idea, take risk and promote it"* (5:502) which was exactly the objective behind understanding of the concept of entrepreneurship.

6.5.2.2 Assessment of Personal Learning Gaps and Critical Thinking

The assessment of students in their self-discovery knowledge through the process of reflection helps not only with the creative capacity development but also with the development of entrepreneurial capacity. The analysis of the qualitative data demonstrates that as a result of the intervention, the students started assessing themselves more critically, taking into account new acquired skills and personal weaknesses.

From the personal diaries of students, it is seen how they take account of their learning gaps. Thus, some students write in their diaries that they *"realized which skills should be improved"* (6:174) or that they understood that something was not as easy as they thought:

> *"This class session made me think: ...«How I will write my business plan or business model?». All this new information made me feel that to be a businessman is not easy, you should really work hard, brainstorm everything, read a lot everyday about start-ups and try more and more."* 9:305

> *"This class session made me think that it is not easy to prepare for presentation and I should practice more."* 9:110

> *This class made me think more about my actions while presenting. Rather than focusing on the content of the presentation I had to give more attention to how I*

was presenting it and how to stand, move my hands, use my voice and interact with the audience. Giving presentations can be nerve wracking but being really prepared can alleviate stress and if you are well prepared it can be enjoyable to present." 1:406

Despite the fact that the MBA course was not promoting any competition within the students nor a competitive environment, some students are naturally comparing themselves with their classmates in order to improve their skills:

"I've compared how other groups did their presentations and tried to improve the way we presented it, because to be successful you need to be impressive in front of your audience." 9:178

"I felt how important it is to be faster and better than the others to become successful because the ideas for start-ups are in the air and everybody can use it (for example many people were thinking about the sport app). The most important thing is to be always a little bit better than anybody else." 16:419

In the diaries the students also describe the process of personal growth and how they become aware of personal improvements. Some comments include that the classes *"made me think about myself in another way"* (6:130) or *"help me find myself"* (6:186). The students describe the process from the perspective of time, saying that *"every class is one more step to reach my goals, to find what sphere I am good at"* (18:290) or that they realized that they are *"starting to think more creatively"* (4:379). Many talk about the feelings (primarily related to teamwork) which were new and were discovered during the learning process:

"I've realized that I like this feeling when I am responsible for something." 6:130

"Since the class, I am not afraid to face fears and take responsibility, not only for myself but also for my group." 6:186

"For the first time I felt like I had some leadership quality in me and I can guide a group." 2:238

"I felt that I am a good team player, it is really interesting and beneficial when you work in a group. More communication, more responsibility, more data, but less time spent, that is really important." 13:201

Finally, the students also express hopes as the result of assessing their learning gaps critically:

> *"I sincerely hope that these tools will eventually help my thinking to be more innovative and will affect the way I take my decisions and the way I do things."* 15:322

6.5.2.3 Development of Self-Knowledge through Reflection and Feedback

Similarly to the assessment of personal learning gaps and critical thinking, helping the students with developing their self-knowledge through reflection, self-discovery and feedback was one of the objectives of the MBA course. The difference between these two categories of analysis is that in the first case the students approach their learning process by analyzing what they do know and what they do not know, to what extent they improve their skills and how they can become better as a result of the participation in the MBA course; while in the second case it is important to analyze how the students change as individuals, what they learn about their personalities, which things they consider can make them stand out from the crowd or make them happy in their lives – all of which are essential for developing the entrepreneurial mindset. The example below from one of the diaries illustrates such personal discoveries:

> *"After the class I went home and watched the video of Osterwalder once more and realized that it was one of the most important things in my life. I thought a lot about how to run a business, how to make a start-up and who I am. Now I know for sure, that I am an innovator. It was not difficult to create the idea of an app, but it was difficult to choose one."* 16:358

The student describes how the experience lived in the class and getting to know about one of the most influencing people in start-up management made him ask himself a question of who he really was, what were his passion and interests. Other students express similar thoughts in their diaries, the diaries become for them a space where to philosophize about business world and their role in it:

> *"This class made me think that it is very important to love what you do. People should find what they like to do and bring it into business world and make it profitable. If only all people in the world could do it…it would be a wonderful world."* 6:254

Here a student realizes how important is to love what you do and really find something which would be self-fulfilling because only this way an individual can become successful.

The students also describe how their mindset changes as a result of attending the classes and how they strive for becoming better individuals:

> *"...it made me think about new products, new technologies, because many parts of the economy are changing now. So we can get into this wave with our fresh ideas. We always need to move, try to do something, try to get experience, visit some exhibitions in which we can see something new, where we can improve ourselves."* 14:326

> *"I suppose it is hard to improve so quickly but I started to look at things in a different way, analyze and listen to different ideas, and see how people can act. I opened a new door to discover and this is important."* 5:222

> *"That class session made me think that we should be simple in everything and be more creative, innovative, because we live in a modern world where every second plenty of different new ideas come up."* 9:260

When writing about what the classes made the students think or feel the students recognize that the classes helped *"to gain awareness of my own behavior"* (10:459) to increase *"the level of curiosity"* (11:132), *"to make my brain turn on"* (6:343), *"to change a little bit the way you think, to look deeply and wider and to open my mind"* (5:341), *"to be open to all possibilities which are helping you succeed in business"* (15:260), *"to became more open-minded, try freely express my ideas and some innovation capacity in my mindset"* (9:125).

Since the classes were related with entrepreneurship, many students describe how they see themselves in the role of an entrepreneur, how and why they believe they can succeed in this role:

> *"The last class session made me think «Am I an entrepreneur?», «What kind of business I want to start-up», «How to make this business profitable?». All these questions have seriously made me think about my future business."* 9:212

In this example the student talks to herself in order to discover her real desires and gain confidence. In the next example, also related to starting a business, a student justifies her choice for becoming an entrepreneur:

> *"This class session made me feel that I want to start-up my own business, I want to have something that I start even if it is a small idea in the beginning, it doesn't matter, what really matters is how it ends."* 21:205

In some cases, the students recognize how the learning process helped them come to the conclusion about their future:

> *"This class provided me with a strong motivation to think more about starting my own individual project. After getting my MBA degree I strongly want to start-up my own small business in Kazakhstan. Business Innovation Management course helps me to find out and understand what I really want to do in my nearest future after coming back to my home country."* 7:365

The experience of students also confirms that feedback is an important part of self-discovery process. As one of the students describes:

> *"Feedback is an important part of effective learning. It gives a clear guidance how to work further, what should be changed. It also improves our confidence, self-awareness and enthusiasm in some way for other projects. For me a good feedback is a motivation and a base of improvement as well as part of the working process to achieve results."* 5:564

6.5.2.4 Final Project and Learning-by Doing Methodology

Without a doubt the Final Project played a central role within the MBA course "Business Innovation Management". The work on the project started from the third class session and was organized in a gradual way – students were introduced to the concepts and tools and were asked to apply them instantly to their project work. Thus, the work on the final project was organized around learning-by-doing methodology, which at the same time guaranteed continuous skills acquisition and assessment (e.g. students were asked to work on some of the project parts in class or to submit parts of the project beforehand in order to receive timely feedback). An important role of the Final Project is also observed from the students' diaries – it was mentioned 52 times by 16 students, additionally there were 17 coded segments from 12 diaries mentioning the impact of learning-by-doing methodology. Considering that the Final Project was a centerpiece of the MBA course, it was covering all didactic objectives and intended to help students develop all of the competencies needed for innovation, including creativity (inventing a creative solution for a mobile application), entrepreneurship (developing a real business – a mobile application), modern technologies (working with technologies and inventing a technology), soft-skills (teamwork, leadership, communication), and diversity (the students were assigned their team mates in such a way that each team was composed of members from different nationalities).

In this section, the Final Project is analyzed from the point of its role in developing an entrepreneurial capacity via learning-by-doing methodology, while the impact of the Final Project on development of modern-technologies and soft-skills is analyzed in the respective sections.

Considering that the assignment in the center of the Final Project was to invent and promote a real mobile application (start a business), and not a hypothetical one, from the students' diaries it is seen how serious the students took this task, the project became for them not a standard class assignment but a real work for which they felt responsible:

> *"I became crazy about making a mobile phone app, because I will have a great opportunity to create and try my best to make something new and innovative (not just studying but acting)."* 16:182

> *"The class made me think critically about our App and take it more seriously as the project became more real once we did the business plan."* 10:139

The work on the Final Project was gradual – the students first had to come up with an idea, conduct market research with real final users, analyze weaknesses and threats of about to be launched business, develop a business plan, think of key messages and the promotion activities. This gradualism and constant involvement of the professor in the process made that the students planed the project work with precision and learned while doing. Many of the students' observations are related with planning the project from scratch while acquiring skills, which help to do so successfully:

> *"We spent a lot of time to generate idea for application, how it will work, why people need this app, why they will buy it, what about cost structure and how we will get our money back."* 14:960

> *"During this class session I have learnt how to do a business model canvas of our application project. We were discussing more deeply our channels, key partners, key activities and so on. It helps us to understand more the concept of our project."* 9:245

> *"In this class session we worked on our projects. We tried to answer different questions, why consumers would buy our app, how we would monetize it, what about our competitors, would our idea be new, or not…"* 14:310

A lot of entries in the students' diaries maliciously describe the process of working on the Final Project and learning the tools and constructing the components of the project by doing them:

> *"We tried to think like consumers, so we asked ourselves what we want to buy, what services we prefer."* 9:102

Some students describe the process of how they come up with different ideas and solutions, which steps they took and which tools they used:

> *"We started from defining our key partners who are they, who our key suppliers, which key resources are we acquiring from our partners which key activities do partners perform. Then we moved to discuss about key activities: distribution channel, customer relationship, revenue stream. After that we moved to key resources."* 7:321

At the same time, the students appreciate that *"what they learn"* can be *"implemented in a final project and presentation"* (5:158) meaning that they find very helpful this practical approach and learning-by-doing:

> *"Using our group's idea for an App we completed all sections of the business model canvas together. This helped us further develop our app and focus on some of the key issues. The class was a practical class which was based on interaction with the group."* 1:254

Moreover, the students see the skills they acquired as a result of learning-by-doing as a readymade solution for issues they can face in the future. For example, before taking the Final Project to the stage of development, the students were introduced to the concept of "business prototyping" and were asked to create a prototype of their mobile application. The students see the direct use of these hands on solutions in their professional future:

> *"This class has made me think about prototypes of business. Because even if you have a brilliant idea, it doesn't mean that it will be a successful idea in real life. In the nearest future I would like to make a prototype of my business before launching it."* 6:256

> *"I think what I learned here can have a good use in real life like creating an idea with a group of people I hardly know; thinking of how to implement it analyzing its market and resources."* 2:262

The same can be said about business model canvas, which the students were asked to do:

> *"I have learned how to make the start-up canvas and how useful it is. We did it in groups and it seemed like we are doing a real business strategy. We found good ideas how to monetize our iPhone application."* 16:206

The assessment and feedback, according to the students, is an important aspect of learning-by-doing. Practical skills acquisition becomes more effective when timely feedback is provided as seen from this observation below:

> *"It was good to get feedback in order to understand what we had to do exactly. I learned that we had to reduce the timeframe of the interviews and to focus more on the advertisement of our App and our video should give the message or understanding of what our App is really about."* 2:792

The students found especially impactful the feedback provided by the expert from a high-tech company who was a guest during one of the class sessions. From the feelings the students express in their diaries, it is seen that because they treat their project as real (and not simply as a hypothetical homework assignment), they find the feedback from the expert more credible and it makes them feel that they are in fact working on a very important real-life project:

> *"The eighth week was remarkable, because Arianna invited Nacho Sanchez, the Seo at Inqbarna, a tech company from Barcelona, to give us advice on the applications that we are going to make, also he shared his experience with us and gave us information on the latest news about the app market…we were again discussing our final projects, the application which we have to make…"* 4:753

> *"This was very useful for me at the point as my group project and presentation were due in two weeks. It gave our group a rough idea on how our presentation should be and what our project video should say. As I go with classes, I gain more knowledge over presentation skills."* 2:525

Some students expressed their unhappiness with the fact that they only had one class with the expert because *"more time should have been given to learn from his experience"* (1:297):

> *"The speaker to be involved in the class from the start as I'm sure there could have been more analysis of our own apps and also more questions asked of Nacho's business. It was a valuable opportunity to hear from a business owner…"* 1:297

Working in an "incubator" where everyone is involved with their projects and can share ideas is also an important factor in acquiring entrepreneurship skills. As the students recall *"a lot of my classmates are really talented and creative"* (2:792) and *"it*

was interesting how others made their work, which innovative and creative approaches they used" (5:517):

> *"It was a nice opportunity to see different creative solutions of different people. There were some nice videos which you could see that people took time and thought how to be creative."* 15:175

> *"We started to discuss our last class assignment and shared our ideas on application with Arianna and everybody else. It was interesting to listen to the ideas of other students, as well as to share your own ideas with them."* 4:220

> *"I was proud for my team that we have done a really good video and interview. Other teams' members approached us and said it was the best. It was very pleasant to hear."* 16:168

At the same time, working in an "incubator" challenges and motivates the students; by looking at other classmates they strive to do a better job and have a benchmark against which to compare themselves:

> *"During the class we were analyzing videos of other students due to the final project. […] Some video adverts impressed me and frankly I have not even expected to see something like this. […] We saw how students cooperate and became a real team. Each of us received a feedback and clear understanding what to do further."* 5:517

> *"I learned new ways of doing videos and presentations as other teams did everything differently and in the future I can use some of their ideas as well."* 16:148

> *"I have learnt from our class session that my classmates are very creative because during the class we were watching advertisement videos of each group and I really like it. It made feel that our group has to work hard to make our advertisement video more creative."* 18:93

In general, the whole process of learning-by-doing, being part of an "incubator" where start-ups are created, meeting with experts and receiving continuous feedback, according to the students meant a lot in their development as entrepreneurs and was important in the MBA course for gaining the entrepreneurship competency. As one student recalls: "*Especially the preparation process for our final project had a big impact on me as a future entrepreneur"* (9:108).

6.5.2.5 Learning through Transference and Success Case Studies

The participation of real entrepreneurs in the class sessions and listening to their success stories is by far an element in the MBA course which had the highest impact on the students. There are 60 coded segments from 19 diaries related to the visits of the entrepreneurs and learning from their experience and 38 coded segments from 17 diaries related to the role of the success case studies in the learning process. The students found the stories of these entrepreneurs *"inspirational"* (19:243) and *"useful to see an example from the real company"* (5:358). The general feedback from the students on the visits of the entrepreneurs is highly positive and they believe that the experience the entrepreneurs shared with them is the most important point of learning how to create and manage the company:

> *"I found important in studying process to meet with different people from a business world, it helps to understand better the structure of business as a whole, and see the real examples."* 5:200

> *"The guest lecture was fascinating and I hope that we will have more experience with professors that hold a special outlook with extensive knowledge who also pass the knowledge to the students in a fascinating way."* 15:220

The students describe what kind of knowledge they obtained from the guest speakers and what especially attracted their attention, outlining the details of the business strategy they saw, the business tips the entrepreneurs shared with them, and so on:

> *"Victorio gave us live example of how his innovation ideas became a successful reality. I understood that first five years in any business would be very difficult. It is not enough just to innovate, the main thing is to understand the need or demand of the consumers. In order to understand customer´s needs the proper analysis should be done, what problem can I solve or why people need my innovation. All these can help me in starting up my business."* 8:543

> *"From his speech I learnt that success in business is an ethic and that money are important, but you have to take care of your clients, think about their needs, preferences, what they like as it can lead you to new opportunities, you can be more flexible in decisions and create something new or improve, develop previous direction."* 5:511

More importantly, meeting with entrepreneurs helped the students to realize their own mistakes, look differently at how to do things or approach situations from a different point of view. All of which means, that learning through transference indeed

does take place when interacting with real individuals who had faced similar problems earlier. The observations of the students show that the entrepreneurs helped them to find solutions to some problems for which the students did not have an answer, however, the experience of someone who lived through the situation opened their eyes and helped to find a right way of doing things:

> *"Whenever I plan something I always do too much at the start with too much detail so he made me think critically about doing things in a simple way at the start and then building up on them once they take off well as he only started with the 3 vespas and 3 GPS. Since the class I have been doing research on my own business plan idea and things seem slightly more possible to accomplish than before."* 10:547

> *"Listening to people who are more experienced than me always helps me to improve myself, because I learn from their mistakes and try to avoid these mistakes if I face them one day."* 21:179

Additionally, the students find that the knowledge they obtained from the entrepreneurs is very practical and can be used in the future. It seems like the students give more credibility to the knowledge they obtain from entrepreneurs than from the traditional learning materials as what they heard from real people looks more real and applicable to the students rather than a hypothetical problem described in a traditional case-study. Many students mention that what they heard from the entrepreneurs they wish to apply to their future business:

> *"I can use the experience the CEO of this company shared with us when I will start up my own business."* 9:262

> *"What I learnt in the second half of the class from the speaker can be used in real life particularly when considering starting a business and analyzing the potential for the business."* 1:184

> *"Meetings with the persons such as Vittorio, who already has the experience in business start-ups and who shares his experiments with everybody are very useful for the students, especially for those, who want to open their own company."* 4:231

Some students recognize the theoretical concepts in the stories of entrepreneurs and admit that listening to real success case studies puts *"more clarity in my mind and refreshes materials I learned before in theory"* (5:177).

Moreover, the students expressed a wish to treat the stories of the entrepreneurs as a real case study, which can be discussed and solved in a similar way as a case study of a company they never knew. For example, one student said that he *"would like to see*

balance sheets or statements on the profitability of this business. It is very interesting to know how many people have invested, for how long, what funding it has attracted" (14:495). Another student suggests:

> *"Possibly after the speaker had left we could have analyzed a little more what the business was about and maybe in groups come up with ways to take the Vesping business forward (good ideas could even be suggested to Vesping themselves). We could talk about the challenges faced by Vesping and how they can overcome them and continue to grow."* 1:427

This confirms that the students find it more interesting and motivating talking about a real company rather than an invented one. They associate themselves with the reality of the business they heard about from the entrepreneurs and want to apply their business knowledge in order to discover more or to learn more, as seen from the observation below:

> *"I was pleased to see how such a complete process happened with a real company and actually see the stages and their impact on the whole process."* 15:140

It is also notable, that after meeting the entrepreneurs, the students compare themselves with them by understanding that *"he does not differ from us"* (16:309) and that *"everything is possible"* (16:309) which gives the students more confidence to start up a business – the idea of starting up a business does not seem unrealistic anymore after seeing and talking to real people who "*just found a good idea and used it in a right way"* (16:309) and started their business from scratch, thus achieving success:

> *"I felt a little bit nervous about doing business in Europe, but this man taught me that when you start you do not know what will happen, you don't know the opportunities you have, but you have to search for them. That is what I felt – confidence in myself."* 18:421

> *"This class motivated me a lot to open my own business and it made me feel like nothing is impossible as the CEO seemed to be just a normal person."* 10:547

> *"I enjoyed listening and interacting with the owner of a local start-up. It is inspiring to hear a success story of not only an entrepreneur, but an entrepreneur that has come to Barcelona from another country and has been able to locate a niche market in which he can be successful despite the challenging times. I feel like this was a quality session and I was able to gain personal insight from his presentation and willingness to answer questions."* 19:451

Many students recognize that after interacting with entrepreneurs, they felt really inspired to start up their own business, they understood *"how a business is brought from*

a dream to a reality" (10:402) and that they started to look at the option of starting up a business as being more attractive:

> *"This class made me feel excited about the prospect of someday launching my own start up, slightly anxious and fearful of what might happen and more aware of the competition that will always be on your shoulder."* 1:210

> *"This class and especially the guest lectures can give you real tools and real view of reality, and we see normal people that had a dream and were not afraid to go after it and to me it gives a lot of inspiration."* 15:284

> *"It was indeed an inspirational presentation that he gave. The fact that he has been successful and started up with almost no capital, is inspirational."* 19:243

> *"Also during this class session I started to think about some business idea. Which will probably be launched in nearest future."* 6:127

The students believe that meeting with entrepreneurs *"can open our minds and generate really good ideas"* (14:396), *"make us act differently"* (11:254) and *"change my way of thinking"* (12:366). Another student confirms this notion and the fact that interacting with real people with relevant experience makes the students think differently:

> *"Everything is possible in Barcelona. This is the main idea which I gained from this class. I start thinking of how I can express myself here in Barcelona. What can I propose to this city. Can I develop something innovative and helpful here?"* 8:312

It is also important that the students do not only see in the success stories of entrepreneurs an example of how to make money, but also an example of self-realization and how to contribute positively to the society. One student describes that meeting with a business owner made him *"see the world from the sight of the person who did a business"* and that for him *"it is a great kind of motivation that helps not to be scared of starting your own business"* because "*Victorio didn't have much money at the beginning, he had only 3 vespas, now he has 33"* (13:485). After this meeting, the student concludes: *"As Victorio, we shouldn't make businesses only aiming at getting lots of money, it must be the dream work...every time you will just want to create something new, improve your product!"* (13:485). Another student saw in entrepreneurs the passion for doing what they liked and concluded that *"the main point of our life is to enjoy it because you can have a lot of money but if you don't do what you want you are never going to be happy"* (18:421).

In general, the visits of the entrepreneurs made a strong impression on the students, both from the learning point of you as well as from its inspirational and motivational side. The students admit that *"the guest lectures contributed for better understanding of the process of building something new in order to be different on the market"* (11:574), that having *"contact with different people from a business world, listening to their experience and going through the mistakes which are better to avoid"* (5:231) is very important for the students as future entrepreneurs, and that they would like to *"meet more such interesting people, with experience, deep ideas and desire to share with others what they know, to help understand and feel the process, to give right instructions"* (5:257). According to the students, *"meeting with successful people, who are sharing their experience with us helps extend our knowledge and show us the real environment - the opportunities, the threats we will face"* (11:312). The satisfaction with guest visits was so high among the students that some suggested that *"if you keep doing it in future classes, it will be an effective way to improve our scope"* (11:312).

6.5.3 Understanding of Modern Technologies

Understanding of modern technologies is an important prerequisite for the innovation process considering that to a large extent innovation is based on the technological progress and vice versa. Thus, it is important to introduce the students to the world of modern technologies, make them familiar with primarily business technologies which help improve productivity within the business processes, and to eliminate the barriers (such as fear) when dealing with modern technologies. In the MBA course, the subject of modern technologies was approached within several components: 1) theory and discussions; 2) success-case studies; 3) using modern technologies in the learning process (e.g. movie maker); 4) inventing modern technologies (working on the Final Project with the purpose of developing a mobile application). Below is the analysis of the components which helped students gain knowledge and awareness of the importance of modern technologies in the innovation process.

According to the students, *"almost each class was connected with innovations in the world of technology"* and the class tasks were *"related to modern technologies in order to see how it works on real examples"* (5:208). The students *"felt grateful to have*

had an insight" (10:214) of how modern technologies work. In their diaries, they describe real examples seen in class:

> *"He talked about the meaning of freedom of using GPS and I think it is an example of thinking beyond how to combine the comfort and sense of freedom that is so important to create when you work with people who came for vacation."* 15:226

The students also share how their mindset changes in relation to modern technologies and their use:

> *"The session has made me think about how an app can be both easily accessible for users and profitable for owners. The key to a successful app is in its popularity among users, this will lead to financial gain in terms of advertising and premium products associated to the app."* 1:381

The discussions based on real examples seen in class give the students food for thought and help them to understand modern technologies in depth and their impact on the modern society and economy. For instance, many students describe in their diary Vespa company, whose owner came to one of the class sessions and which provides unique experience for tourists in Barcelona based on smart GPS systems. As one student describes:

> *"It made me feel, that we must do something new, like your friend Victorio. He liked Barcelona, he wanted to do something new, so he made business rent moped in GPS."* 14:164

Another example the students saw was a presentation of a high-tech company that produces mobile applications and whose director told the students about the process of creating an app. The observations of students show that they do not only understand what the app is about but how to make modern technologies work and how to engage with innovation based on commercialization and invention of new modern technologies:

> *"In the second part of the tutorial, we came to the developer and owner of the company for writing programs, his name is Sergio. […] He also introduced us to his application for searching and listening to music. This application has many different useful functions […] This is a very important point in the evaluation of the application, so we can understand whether you want to continue to focus your attention, time, money on this product, or your need to move forward, to create something new, look for other opportunities to sell your product or service to the end consumer and make a profit."* 14:810

The experience of using modern technologies in the learning process has also proved to be fruitful for transmitting to students the sense of modern technologies, to make them "fluent" when using them.

> *"On the last class session we were presenting our application videos. The video consisted from the interviews of people and the main part of the video - description of the product. In order to take this video we have been to airport, because our application was about travelling. After filming, our group had to make up the real attractive thing, that would be truly understandable and simple. During this process I learnt methods and techniques of working with music, videos and computers."* 13:495

In some cases, the "fluency" in modern technologies acquired through learning-by-doing and real examples is transmitted into the creativity thinking process, into how to create new technologies which would help to improve something or to solve a problem:

> *"This class session made me think of new ideas of applications, it made me think about the problems that I face daily and how applications on my phone helped so I started thinking about new ideas for the applications."* 21:148

Overall, the diaries of the students show that all components were important for making students familiar with modern technologies, especially real examples, learning-by-doing and an objective of not only using but also creating a technology. However, a big role in understanding modern technologies was placed on the Final Project as seen from the students' comments below.

Considering that the objective of the Final Project was to provide the students with an understanding of modern technologies, by working with them and by engaging with establishing a technological start-up, in the students' diaries it is observed, how knowledge in the area of mobile applications was gained as a result of the Final Project:

> *"I learned how to develop mobile applications that is an entire system. First, you have to find an idea, then check for a variety of business models, get to know the opinion of consumers, whether they need such an application, if they are ready to pay for it, and if so how much. It is also important to know the opinion of customers after the launch of the product, what they lack, what new things they would like to see that they absolutely need, and so on."* 14:546

It can be concluded, that once the students worked on one technological start-up, they would be able to repeat the experience while working on some other technologies.

The observations of one student show the confidence he has gained while developing an application for the Final Project and is ready to look further for market opportunities within the modern technologies market:

> *"Applications, operative systems, smartphones – it's very interesting for me, because it changes the world, because this area is world-changing. This area has very big market potential, people who everyday buy smartphones, tablets, players, computers, etc. We can offer them what they want to buy, how we can make their lives easier, how we can solve their problems."* 14:511

After working on the Final Project, someone even sees themselves in a role of developing an application in their future job:

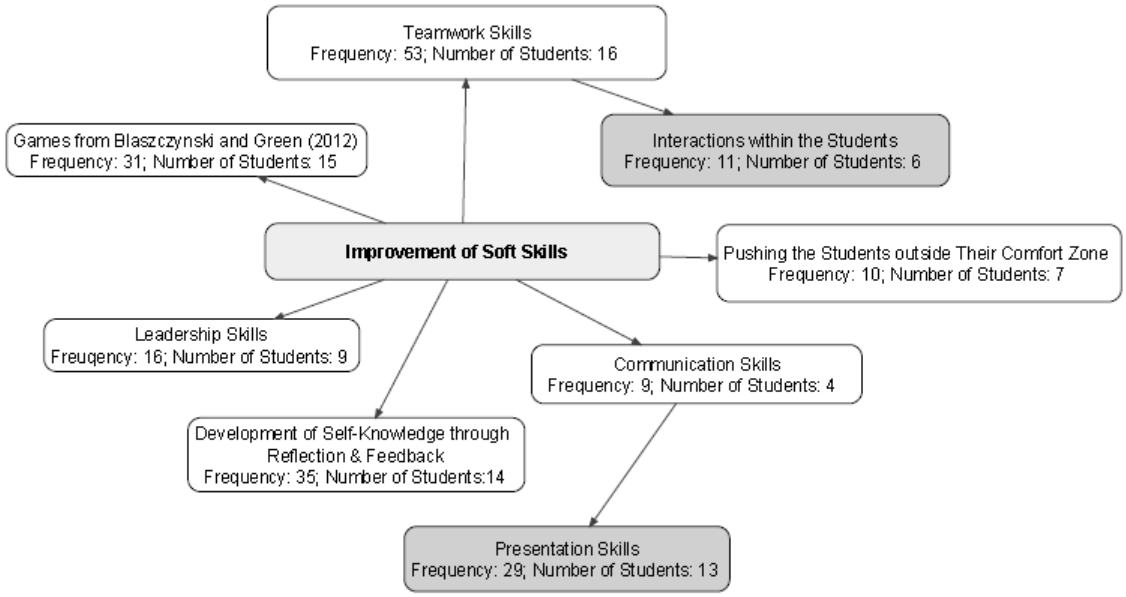
> *"Applications can be used in real life and sold through the app store. It is possible that in a future role I will have to help in the development of an app and this experience will be beneficial."* 1:392

Overall, the Final Project work, and especially learning-by-doing methodology, proved to be effective for the objectives of understanding better the modern technologies as the observations provided by the students outline.

6.5.4 Improvement of Soft-Skills

As seen from the Graph 13, the second-level categories which emerged during the analysis of the "Improvement of Soft-Skills" category refer to the soft-skills itself (Leadership, Communications, Teamwork) and to the teaching methodologies for improving soft-skills which are included in the Didactic Unit 3 of the MBA course: games adopted from Blaszczynski and Green (2012) and the methodology of pushing the students outside their comfort zone.

Improvement of Soft Skills: Units and Categories of Analysis



Graph 13

6.5.4.1 Leadership Skills

Naturally, the students mention leadership qualities in the context of teamwork, when they had to lead their teams or when they observed that somebody was leading their teams effectively. Teamwork assignments were crucial for the students to, first, understand the concept of leadership and its importance, and second, develop leadership qualities as a result of teamwork. Teamwork assignments made it clear for the students that *"in any team certainly there should be a leader who will coordinate the work of the whole team, delegate authority, monitor the results, and help other members of the team"* (14:480).

Some students provide their personal understanding (concept) of leadership which they figured out as a result of participating in the MBA course:

> *"First of all, I understood some concepts of how to be a leader. To be a good leader you should develop your team. You should communicate with them, motivate them, ensure that team members have the necessary skills and abilities to do their job, you can achieve that by listening to them, asking for feedback."* 8:305

> *"The victories and failures of leaders depend on their relationship with followers, their communication skills. Good leaders show their capabilities with situations that require them to react quickly, think pragmatically, take the risk before making*

the final decision. During the decision-making process, leaders are affected by different factors, and are supposed to deal with their emotions. Effective leaders know how to reach the final goal, combining the responsibility of the team and a personal behavior." 11:709

Teamwork showed the students the nature of leadership in practice and its importance for success of a team, as one student describes:

"I also learned that even if a task looks very simple once there are more people involved it becomes more chaotic and complicated. In such an instance if there is no guidance and direction given from one person of the team the task becomes close to impossible." 10:260

Teamwork also helped the students understand what makes a good leader:

"Everyone is good at something, and I think one of the problems of leadership, to identify these strengths in each individual." 14:480

Surprisingly, the students believe that the most important quality of a leader is an ability to communicate with others. They associate good leadership with communication skills, as the practice of working in a team demonstrates:

"Because of this course I understood how important it is to know how to work in a group. I also felt myself as a leader in my group and found ways how to communicate with people in my group who have another mentality and ideas." 18:222

"This class made me feel confidence in my leadership skills. I improved myself as a leader and as team member. I understood how to communicate when I work in groups." 18:164

"This course helped me with my leadership qualities. As I have mentioned earlier in my journals I was given an opportunity to be in charge of what was to be done which definitely helped me a lot. It helped me to work as a team and on my communication skills between the group members." 2:282

One student gives an explanation why communication skills are important for a good leader; according to him, communication skills are needed *"to be able to communicate well to sell a personal vision of the future to investors, potential clients, team members, etc."* 5:592

It is also important, that as the students associate good leadership with communication skills, they admit that the MBA course helps them to develop these skills too:

> *"Classes give me an answer weather I can be a leader and motivate others, and if not I got to know how to improve it, I received communication skills."* 5:292

In their diaries the students describe the feelings of working in a team and some of them share that *"it was a first time"* when they felt that they should *"take responsibility not only for myself, but also for my group or my followers"* (6:186). One student describes a routine situation, which helped him take on the role of a leader in his group:

> *"This was the first time I took complete responsibility of the group as my group members were using a MacBook and didn't have PowerPoint I had to put the slides together and work on it. I was proud that I could put up the slides and manage the group. For the first time I felt like I had some leadership quality in me and I can guide a group."* 2:412

Other students, similarly, admit that teamwork made them feel a leader and helped them to improve their leadership skills. This discovered leadership capacity really fulfills the students and makes them see the results of their work in a more positive way:

> *"I felt myself extremely comfortable and happy because of the opportunity to create. The greatest thing for me was that I felt myself a leader sometimes (because finally, my idea was used and I was presenting it). Moreover, my team was really great and everybody made its contribution in our project."* 16:357

The general impression from analyzing the students' diaries is that the MBA course allowed them to experience some situations where leadership was crucial and critical for a collective success, which made the students go outside of their comfort zone and start acting as leaders.

6.5.4.2 Communication Skills

Similarly to leadership skills, the students understand the importance of good communication skills in the context of teamwork. According to the students, working in a team demonstrated to them *"how important it is to express your idea in the right way to other people and come to a compromise"* (5:280).

The students recognize that *"lots of activities were based on communication"* during the MBA course and they provide their explanation of why, in their opinion, these activities were included in the course and with which purpose:

> *"Lots of activities were based on communication, as it is essential to know in which way to deal with others, as an ability to listen can make or break you as an entrepreneur."* 5:396

The students also hypothesize in which way *"learning how to better communicate, understand and reason within a diverse group of people who have the same target or goal"* (19:276) can help them in their future professional career:

> *"I can use this experience in a range of places in my life such as any working team in any diverse workplace."* 19:248

Many students admit that the MBA course helped them to improve their communication skills, especially within *"a diverse group"* of people. The students emphasize the diversity which they faced during the teamwork and the importance of finding approaches of communication in order to be able to work together:

> *"I believe that one main improvement from this session is learning how to communicate within a diverse group of unknown people, who have different mindsets and levels of understanding of the project. Communication and reasoning are two main improvements from this session."* 19:276

> *"I understood how to communicate when I work in groups."* 18:164

Apart from verbal communication skills, the students appreciated that they could also learn some aspects of non-verbal communication (e.g. body language which the students found "*significant to leadership and management and any kind of relationship"*) (5:520):

> *"I remember that we discussed the way of presenting ourselves, the body language. According to body language we can notice a lot about feelings of people, their thoughts and relationship to you. It is kind of information about our personality."* 9:243

> *"Communication is a base of any human relations and I absolutely agree that we have to start with exploring our body and understand the body language itself, which refers to various forms of non-verbal communication. Though physical behavior you can easily analyze a person, his feelings and intentions, meaning to others and vice versa. Gestures, postures, eye movements can indicate pleasure, aggression, attentiveness, delectation."* 5:520

Within other aspects of communications skills, what the students mention most of the times, are **presentation skills**. The MBA course provided the students with the idea that *"business leaders are often expected to present their message with confidence*

and clarity to staff, clients, partners, investors, and the public", and thus, *"effective presentation skills reduce miscommunication"* and are *"vital"* (5:589). According to one student *"every leader needs to be able to stand up and deliver a clear and inspiring message. Better presentations do not guarantee a success but they will give you a better chance for success"* (5:589). Other students have a similar opinion:

> *"Presentation skills are extremely important in business. Being good at presentations will also give you a natural confidence in other situations such as speaking at interviews, speaking out in team meetings, etc."* 10:212

The students learned about the presentation skills in various ways: while watching the presentations of other business leaders, while working and preparing a presentation for their Final Project (including advice received from the course instructor and guest speakers), and while participating in a special class session dedicated entirely to practicing effective presentation skills. In their diaries, the students describe how all these activities helped them to become better at presenting.

For example, watching an inspirational video of a business leader impressed one student in the way how this business leader was doing his presentation; a student tells how he tried to do a similar presentation, which is a clear example of learning through transference taking place:

> *"This video with Alex Osterwalder I was noting how he did his presentations, why they are successful, and then I tried to make a presentation like he did in order to improve my presentation skills."* 9:209

A real entrepreneur who came to class also helped the students to understand better how to prepare a successful presentation of their Final Project:

> *"This was very useful for me at the point as my group project and presentation was due in two weeks. It gave our group a rough idea on how our presentation should be and what our project video should say. As I go with classes I gain more knowledge over presentation skills."* 2:273

However, what really helped the students to improve their presentation skills, according to them, was a training dedicated to practicing presentation skills. For this special class session, the students prepared a presentation *"about different situations in companies"*, for example, *"why you can be fired from a company"*; then the students

"showed the presentations, compared it with others, understood something new" (14:467).

For many students, this special training on presentation skills was the first time they were shown how to prepare a successful presentation and how to present in a clear and structured way:

> *"This was the first time I was guided into a structured presentation where I was given guidance over how it has to be done, how to interact with the crowd and I learned that in slides we have to have the minimal amount of text and more pictures and graphics to keep it interesting. I could really use that information for my final group project as well as in my future."* 2:369

The students vividly describe what new they learned about presenting and how their perception of what good presentation skills mean changed. Especially, they understood that gestures, posture and non-verbal signs can play an important role while presenting. Most students mention that this was the most important discovery about good presentation skills, as one student puts it: *"body language is equally if not more important than words in presentations as if you appear more confident your words will have more power and vice versa"* (10:221):

> *"I learnt how to behave, stand, speak, gesture, as well as eye contact while you have to stand in front of the public, because it can build a strong connection, confidence, people can believe in what you are telling and listen to you…"* 5:467

> *"I learnt some new tip for doing presentations. For instance, I didn't know that in business when you put your hands below the belt is a taboo. I learnt how important body language in public performance is."* 6:213

> *"It is very essential to know how to present and in this case you need not only to have a talent of a good speaker but also show it in the right way, with gestures, postures and be sensitive and in touch with the audience, be flexible and feel when it is interesting to others or weather you have to change and make it in a different way."* 5:357

The students also describe in which way they were practicing body language at that special class session and how the instructor helped them to improve:

> *"Elena commented on our presentations and how we could improve. I was advised to stand taller when speaking and keep my shoulders back more. This was very useful feedback for me."*1:451

"I was always afraid of presentations because I always lose my voice in front of big unknown audience. When I was presenting at this class I was not nervous because teacher showed me how to behave, to stand, to use body language. Teacher told me that I was the best performer of our group and I was really happy that I did well." 18:328

"I think I have improved a little. I am usually extremely nervous giving presentations and I shake a lot, etc. Thanks to the tips I received I concentrated more on my appearance rather than on thinking how nervous I am which made me a little bit more confident than usual." 10:271

All students found this practical approach to teaching presentation skills very helpful and effective. They also appreciate a lot the work the instructor did:

"Elena did a great job of explaining the objective of the exercises for posture when giving a presentation. I truly had never before had someone explain and demonstrate how one should physically stand in regards to breathing, leaning and swaying to find a comfort zone during a presentation. This is very helpful!" 19:313

"I really loved it because we had the opportunity to get the feedback about our presentation skills. It was useful." 16:115

As a result and according to the students, this teaching method helped them to improve their presentation skills:

"I feel like I can truly be a better presenter with her pointers. Learning how to physically relax and be in tune with your audience while presenting is of utmost importance for a quality presentation and I feel that I have achieved the expectations of learning that she had for me in this class." 19:295

"The class made me feel motivated to improve on my presentation skills as because of the tips I felt that I can really get better at presenting." 10:144

"The class made me improved my presentations skills. In 3 minutes we were supposed to give the most important information about our event in order to capture the attention of others." 11:181

Some students found this class so useful and presentation skills so essential for business leaders that they felt sorry so little time was dedicated to the matter, the students wished there were more similar classes:

"For the amount of time we had I think the class went very well. I would like to have more classes like this as I have not mastered the skill of giving presentations just yet and I think they are crucial for my business career and confidence." 10:242

The general opinion, however, is that despite the fact not much time was dedicated to practicing presentation skills, the combination of working on the presentation of the Final Project, watching other students presenting, and practicing the presentation skills considerably helped the students to become better presenters towards the end of the MBA course, as evidence of some students suggests:

> *"Towards the end of this course I can say that I have definitely become better at my presentation skills, I was really nervous and didn't have much of idea how to do it before Elena's class but I gradually learned things which helped me to do the final presentation."* 2:266

6.5.4.3 Teamwork Skills

Teamwork was an essential part of every activity during the MBA course starting from the first class session. Teamwork was a component not only of the class activities, but also of many home assignments – development of the Final Project was based entirely on teamwork and most of it the students were doing outside of the classroom. As a result, the students mention teamwork almost in every entry of their diaries. Starting from the first session of the MBA course, the students were exposed to the teamwork in order to understand its role in the successful development of different tasks and assignments:

> *"To be honest at our first class I learnt more about people with whom I study. On one hand, I do not think that it is knowledge about business innovation. On the other hand, I have recognized what is teamwork and how much it can help in the future. I recognized that teamwork does not mean everybody is doing the same thing or everybody being able to do each other's jobs. It is more a means to a synergistic way of working, where the sum is greater than the parts."* 18:462

> *"Teamwork is apparent in any work environment and if not, getting along and learning to communicate with different personalities is definitely important and guaranteed to be faced on a daily basis. This class has helped me understand the importance of communication in a team."* 19:266

The big part in the development of teamwork skills is attributed to the Final Project. The work on the final project was developed entirely within a team and the success of the project itself depended on how efficient the work of a particular team was. Being exposed to teamwork through some assignments before the work on the Final Project started, the students were looking forward to learning more about a successful cooperation within the team while working on the Final Project:

> *"In addition, I am excited about our group project. It seems to be very interesting and I think it would be useful to understand how to work in groups. Because when you work individually, everything depends on you. But when you are in group everybody depends on each other."* 18:274

Very soon after the work on the Final Project started, the students opened their eyes towards the role of teamwork in the achievement of results and success:

> *"This class session has made me think and feel that team work is very important, we can offer ideas to each other, then we try to take the best of each of them."* 14:150

> *"The class showed me that working effectively as part of a team is highly important for the output quality, for the final goal. We have several students working together in close proximity on the same goal."* 11:207

> *"The class made me feel a sense of unity, of enthusiasm for common interests and responsibilities among a group of persons closely associated in tasks. The class showed me the importance of creating synergies. Teamwork worked as glue, which kept our team together. It enabled us to overcome the obstacles through the promotion of loyalty and support. The benefits gained from teamwork synergies are essential for the successful outcome."* 11:441

The students also realized the importance of the teamwork for their future career:

> *"In this class we again worked in teams. In the business world people are constantly working together in teams and the better I become at this the more employable I become. This is very important."* 1:392

> *"Once more, I realized how important it is to be able to work in team and not keep ideas inside you but share them with the others. And I will definitely use it in my future career."* 16:181

In their diaries the students describe different aspects of teamwork, the difficulties they faced and the discoveries they made about collaborating while working in a team. By observing the team dynamics and **interactions within the students**, it is possible to see how the skills of working in a team were gained with every new activity during the MBA course. For example, the students say that *"the class raised the importance of everyone having a voice, being listened to carefully and heard with respect"* (11:125) or that *"it is also important to negotiate with your group, because each person has different opinions and ideas and it is important to take into consideration each proposal"* (12:461).

The students admit that these group dynamics were very *"beneficial"* in order to become more open-minded and learn how to adjust to different people in order to achieve results:

> *"This class was very unique to me. Sitting in that group where every student comes from a different country and has his own culture and different perspective on life is very interesting, and even more interesting is the dynamic between the group members and how much it is beneficial to have the ability to be open to other people's ideas and not necessarily run to your comfort zone."* 15:374

However, before achieving the desired results, there were also obstacles to deal with during the teamwork, as for example, some students not dedicating enough time to common assignments or the difficulties of reaching an agreement:

> *"The one thing that I would like to stress is the difficulty in teamwork. During our group meetings some members miss the appointment or come later. Another worse thing is that some of them do not accomplish their part of assignment. We lose our time for things like that…"* 7:270

> *"Everyone has his/her own ideas and ways of doing this assignment. And after long discussion we should come to one decision how we all see this marketing campaign…"* 8:288

> *"During the final project preparation I felt some inconvenience because of my group members' non-organization. The working process was not efficient, people were late for group meetings."* 7:188

Nevertheless, despite the fact the group dynamics were not always positive, the students felt strongly motivated by people who surrounded them during the MBA course and constantly were learning new things about each other, adapting to each other and making a stronger team:

> *"I also improved my skills in team working. How we can use the best skills from each other, how to divide tasks, who will prepare a business model or a marketing plan, etc."* 14:168

> *"The motivation factor also played a role, because we managed to understand each other, we were willing to help each other."* 11:255

Teamwork and the conditions the students were put in helped them to stop judging each other and to overcome prejudice in some cases, as everybody was realizing that openness and collaboration were bringing more results and positive energy:

"Our class looked like a huge workshop where everybody did something interesting and creative. I was surprised that some members of our team, who as I believed were not that interactive, gave us several good ideas. Everybody was helping each other and I loved it." 16:336

"In this class I learnt that we don't judge things without knowing the aim of them. I also learnt that teamwork is the most important thing and if you contact well with your teammates you will achieve your goal." 21:212

Teamwork also helped the students to understand and to work on their personal weaknesses; that is to say to learn not only about their teammates but also to look at personal actions from a critical point of view. The example below shows how one student realized she should not feel negative when her ideas are rejected:

"It has always been a little bit hard for me to work with others when it comes to creativity as I feel very passionate about my ideas and it is simply frustrating when they are rejected. In the class however I was more open to ideas and accepted that their ideas are equally as important as mine. So the class definitely helped me in that sense…" 10:594

The students also mention that as they were getting to know each other and figuring out each other's and personal strengths and weaknesses, they also were gaining trust within their team and could rely on each other, as well as expect help from the team in different situations during the group assignments:

"…the team work always helps. Every class I'm working with a team so it helps me to get along and work with people which will clearly help me in an organization." 2:202

"Our team worked great, so now I know what I can expect from them, and if I have some problems in the area in which I don't have strengths I can ask for help in my team." 14:169

"The specific, unique strengths of everybody were affixed to the strengths of others, as everyone brought out the best. Moreover, the motivation factor also played a role because we managed to understand each other, we were willing to help to each other." 11:225

While facing different challenges presented during the MBA course, for example, such as learning new software in order to create a video, the students realized that cooperation within the team was essential and that without a well-managed work in the team many things would have been impossible:

"That it is without a doubt how teamwork is important and that good cooperation can lead you to an excellent work at the end. People from a team should not think like one solid unit but they should build trust between each other, start learning from others experience, listen and respect your co-workers, and find the best way to achieve a purpose." 5:348

"This class session made me think that it would be hard to realize our app project unless we plan every detail and work in a team so that we can do it in a better way and be successful." 9:173

"Application task helped me to work in a team, to make decisions based on relevant information and by weighing the potential consequences, how to create a real plan and find way to reach a purpose." 5:196

In their diaries the students admit that the MBA course helped them a lot with team-building and teamwork and they find these skills extremely important especially *"because we live in a society where every day we do connect with different people and try to create ideas, to communicate and share our lives"* (9:232):

"I improved team-working, mostly how to propose my idea, listen to other people's opinions and share different ideas and how by collective way to come to the common conclusion. In other words, in the future we will face team co-operations and no difference whether we will take on a leadership position or not, we will be in touch with people whose ideas, first of all, we will need to respect and know how to explain in a proper way even if we do not agree, or vice versa to know how to look at the same direction as the rest of the group in order to achieve a common goal." 5:535

Working together in a team during the MBA course demonstrated to the students the opportunities a good team can open for the success of every project, the importance of support of like-minded people and the unique approach every person can bring, in such a way that some students do not exclude the possibility of working together in the future, which means that the course helped them to establish themselves as a well-organized team:

"I realized the value of having people, who believe in your idea, support it and even share it." 11:613

"We try to open our best skills, generate new ideas, correct each other's mistakes and in the future we can work together not only in GBS, but maybe we can start a new business together." 14:180

6.5.4.4 Games from Blaszczynski and Green (2012) as a Teaching Methodology for Improving Soft-Skills

Various games described in Blaszczynski and Green (2012) Appendix VI were played in class during the MBA course with the purpose to improve the students' communication, leadership and team-building skills. According to the students, in the beginning, not everything went smoothly while playing these games, as one student recalls: *"Once people were instructed where to stand and what to do the system improved and with a little more guidance on the 3rd attempt we were successful"* (1:772):

Other students describe the reactions of their classmates to playing the games; a few students share an opinion that during the games they were feeling that not everyone enjoyed the activity:

> *"I think that a large part of the students were not ready for such a form of learning and were busier with how they looked rather than a learning experience and when it comes to teamwork this learning style (which I believe is excellent) is not for everyone."* 15:281

> *"The class made me reflect on the fact that people are very different and not everyone reacts the same way to the activities. It made me angry that some did not take the exercises seriously as they thought they were not applicable to the real life."* 10:250

Some students, on the contrary, say that these exercises *"are very applicable to real life situations"* (10:380):

> *"…such as we could use them one day in order to bring teams together if put in this situation. The conflict exercise can also be used if there is a conflict and if you let the conflicting parties be the observers without talking while two other parties argue on the same issue as this will allow reflection."* 10:380

Another student explains why she believes that these activities are not appropriate in the classroom: according to her *"it was for many students more fun than something serious"* and she believes that *"such activities are more propriety…if you are in a real project and with your working team, like this you will build trust, confidence, can become closer to each other, understand mistakes and make force for a common purpose"* (5:579).

Such contradictory opinions can be explained by the fact that the students *"found that the class was quite…untraditional"* (8:222). From the observations of the students it is seen that some of them could not open fully, felt shy or, on the contrary, too self-confident, to participate in the games. The opinion below demonstrates that some students could not take a full advantage of the games due to prejudice:

> *"In first several minutes I felt myself an idiot, because I do not like different team-building techniques. I believe that they can give motivation only for those who can do nothing by themselves. I am not like that. I have enough motivation to work and earn money and work in a team. But still it is good to know about these techniques and sometimes team games can be at least funny."* 16:379

Nevertheless, there are also students who enjoyed the games and found them interesting:

> *"During the session I felt myself as an important part of organization where success depends on everyone who counted as part of it. Also I was feeling my importance in the accomplishment of the mission."* 7:199

> *"During this class we played an experimental game with Elena and identified who was a leader in our class. It was very interesting, because we tried to make the strategy and then use it on this game without any words. It was something new for me."* 9:244

> *"I found that the class session was quite interesting and untraditional. The way of giving the information to us was creative and understandable. I mean that through the games it was very easy to understand some concepts."* 8:222

In fact, in their diaries the students talk about different concepts that the games helped them to understand better, for instance, with respect to teamwork, the students understood that *"team-building activities can help develop trust among your employees. Trust is a critical component to business, especially when teamwork is required on a daily basis to achieve objectives and grow companies"* (5:824). The students also understood the ways for resolving conflicts (*"…such team-building activities can play an important role in easing conflicts between co-workers by allowing employees to bond with one another and become closer to each other"*) (5:469) and the importance of good communication in a team (*"…the lesson was that communication is important in order to succeed. During the time when we were discussing strategy there was not enough clear communication within our group as everyone was speaking. Some group members did not understand the game, others had missed the information entirely."*) (1:772).

Apart from the concepts mentioned above, the games helped the students to think strategically and organize themselves as a team in order to achieve results. As one of the students recalls:

> *"These games force you to think about how important it is in any job to choose the right strategy, allocate roles in the team…It was also really important that after these games, we can analyze our mistakes in order to avoid repeating them later in the future."* 14:774

> *"As far as I can remember we've got the fifth attempt. Later we went back to the audience to understand our errors, talked about what we liked and did not like in order to listen to their suggestions and try to improve the chosen strategy."*14:569

> *"Our team won, because we immediately identified that the team must be divided into subgroups, which will have to be engaged in a particular task. Each subgroup was to look for a specific color maps, and later it sort of order. We have kept ahead of time, we were given 1 minute and we made a mistake…"* 14:547

Despite the fact that some students were skeptical about the games, there is a lot of evidence from the students that the games helped them to improve their soft-skills. Thus, the students found the games very helpful for developing leadership and communication skills. The exercises made the students think with more depth about the concept of leadership and good communication, to live through it and draw some conclusions:

> *"I improved my critical thinking by playing a team-building game. I understood that if you want to be a leader you have to be a follower too, you have to handle conflicts in a group, you have to motivate members of your group."* 18:222

> *"I have never before made group tasks for leadership and team-building. […] Through such activities, employees can learn how to better communicate with one another because they will face problems that will need to be solved as a group. And it is important to know how to encourage your workers to resolve issues and act in a calm and professional manner."* 5:1008

The games also were important for the students to understand the nature of working in a team and how the roles in each team have to be divided. For example, according to one student, *"group activities can easily show the character and ambitions of each worker, so that you can see who is a leader, who is afraid or doesn't care, who can't keep calm and manage emotions, who is a good follower and can be in a team"* (5:469). Another student emphasizes the importance *"of everyone having a voice, being listened to carefully and heard with respect"* as part of *"the leader's strategy to reach*

the goal" (11:125). One student says that team-building activities helped him to master *"our skills of working in non-verbal conditions, realizing it in real life, working with tools together, making the project to be finished fully"* (13:511). The games also helped to realize that *"in each team there have to be a strict leader and friendly working team members. Without these components it is not a team, it is just a number of people gathering at the same place"* (13:511). Some students admit that the games *"improved* [their] *capability to take the responsibility, and work in a team"* as well as helped *"to adapt to change, reduce stress, clarify the team goals and reach it"* (11:396).

At the same time, the games were helpful for the students as a way to realize their own mistakes and weaknesses and to look at oneself from a different perspective:

> *"Many times we are not aware of how we act and therefore a certain state photo is very helpful to show some kind of behavior mirror in which you can watch your behavior reflected and become more aware of yourself."* 15:333

As one student observed, in order for the games to be effective, it was *"important to make each of them with maximum effort and accept like as is in a real life working situation"* (5:148).

6.5.4.5 Pushing the Students outside of Their Comfort Zone as a Teaching Methodology for Improving Soft-Skills

When describing different activities which were taking place during the MBA course, the students often mention that they felt strange and that they were taken outside of their comfort zone. Taking the students outside of their comfort zone is a teaching methodology for improving soft-skills and it was used during the MBA course in many occasions, and especially, when forcing the students to play role games, discuss personal issues or perform group activities.

When facing uncommon situations, the students confess that they were feeling like *"an idiot", "strange", "nervous"*, however, the class situations were designed in such a way that the students had to continue despite feeling pushed outside of their comfort zone. The evidence from the students' diaries demonstrates that such an approach was slowly allowing the students to start experiencing new abilities and perform actions which before they thought they were not capable of doing, as one

student puts it: "*My negative thoughts were only coming from exploring something I hadn't done before - It had forced me to step outside of my comfort zone"* (10:1220).

What the students say in their diaries confirms that the result of acting outside of the comfort zone was always positive at the end and the students felt satisfied with what they achieved:

> *"In exercise which we did at class I took the role of a member who is responsible for finishing the task. I was a little bit nervous in front my group. If I had failed my group would have started the task from the beginning. For sure, I didn't want it to happen. It was pushing me. But, anyways, I liked those feelings."* 6:294

> *"During the class at times I was taken out of my comfort zone and saw that it is not all too bad. It made me think a little differently than any other class in a non-academic way."* 1:259

The students also believe that while acting outside of their comfort zone, they come up with approaches and solutions which are more unique and more efficient; as a result, the whole learning process becomes more productive:

> *"…and this kind of a different assignment made people go out from their comfort zone and create something unique and different, and I believe that we are getting tools from that, tools that help us think differently and use our imagination."* 15:338

> *"I had to think about something new for me in a short time period. It seemed like we were under some pressure. In conditions such as that we had a human brain work better."*6:332

In general, as the students mention, *"it is easy to behave normally when you make an effort"* (16:200) while acting outside of the comfort zone, so the most important thing is to *"try"*. Acting in the circumstances which are not usual, gives people motivation and puts them in the circumstances where the only exist is to go ahead despite any difficulties, which in turn, helps them to develop new skills, as the example below demonstrates:

> *"I realized that sometimes I am a little bit nervous when presenting something in a class however it is easy to behave normally when you make an effort. I tried my best and I think everything was good."* 12:164

6.5.5 Coping with Diversity

The capacity of coping with diversity was developed within the MBA course as a result of the following circumstances: 1) the participating students represented 13 different nationalities and spoke different native languages; 2) the discussions involving cultural differences and ways of doing business in different countries; 3) the teams for the development of the Final Project were organized in such a way that in one team there were no students of the same nationality, which was pushing the students to adapt to the cultural differences of every team member in order to reach understanding and positive results.

The diversity of the class was an important aspect of the learning process, as the diaries of the students demonstrate. For some students, it was the first experience when they were exposed to dealing with people from different nationalities. The cultural differences were first revealed during some discussions in class:

> *"It was clearly seen that people can have extremely different opinions even about ONE word."* 6:275

> *"We were speaking about the differentiation between "boss" and "leader". We have realized that there is different perception about these words. This perception was different because of differentiation between cultures."* 6:209

> *"It was interesting how the word boss can mean something different in countries even within Europe."* 1:99

The cultural differences, however, demonstrated to students that the universal values are the same everywhere:

> *"Focusing on the importance of thinking "outside of the box", we discussed in depth, the different ways that people and varying cultures define creativity. In a nutshell, we all (no matter the cultural background) interpret a smile as "happy" and the folding of one's arms as a sign of a "closed" person."* 19:303

> *"It was also apparent from exercises in class that our opinions on the world, bosses, and more are very similar despite the class having different backgrounds, although there are some differences."* 1:196

The fact that the teams for the Final Project were organized based on the nationality of the students impacted them and made them further reflect on the importance of adjusting to and coping with diversity, as one student puts it such team organization *"was a very good way to get to know everyone":*

"I have learned how to work in a team as I was put into a group of people whom I was not acquainted with, and then I realized Arianna had put every odd person together making sure you're not working with the known faces. I felt this was a very good way to get to know everyone." 2:289

Another student shares in his diary how *"diversified"* his team was:

"My group was a much diversified one. I myself an Indian and my group members were from USA, Ireland, Kazakhstan respectively. We got along well and had a fun time creating the project." 2:184

The fact that the teams were so diverse taught the students how to become more tolerant towards people who think differently and how to learn to work together despite the differences:

"This class session made me think about tolerance. I felt that to be tolerant is very important especially when you are working in a group of people. If you behave like an egoist you can't expect to have good relationship between you and people around you." 6:330

"I believe that the one main improvement from this session is learning how to communicate within a diverse group of unknown people, who have different mindsets and levels of understanding of the project. Communication and reasoning are two main improvements from this session." 19:276

Some students found the approach to the organization of teams during the MBA course innovative and appreciated the fact that due to this approach they could learn more from different people:

"For me it was an exposure to a model which I was not exposed to until now. Each student brings his perspective and discussions within the group and of course there is a difference between countries in the form of the concept of things and it's always interesting to be exposed to more ideas." 15:318

The students also appreciated that this approach to the organization of teams was practical because in real life *"you do not choose your team":*

"Whole course helps to be more flexible and able to work in different situations, and most importantly copying with diversity as in real life you do not choose your team and have to adjust to everyone for the common idea." 5:218

There was an opinion that coping with diversity and trying to find an approach to different students in class, helped the students develop communication skills; most probably the student refers to intercultural communication skills:

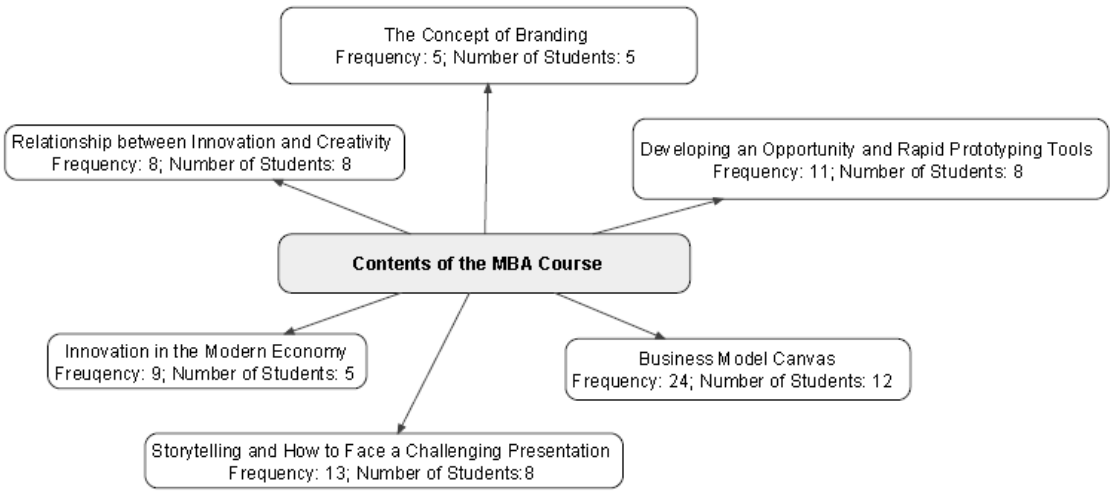
"Taking into account that people in class come from different backgrounds and that there are different cultures develop my communications skills." 11:132

Additionally, working in a diverse environment made the students aware of the individual needs each person may have. In her diary, one student suggests that in class the conditions should *"enable students of various learning preferences and personalities to contribute, encourage quiet students to speak up and, occasionally, ask the more talkative students to hold back from commenting in order to give others a chance"* (18:258).

6.5.6 Contents of the MBA Course

"Contents of the MBA Course" is the only first-level category which was not included in the initial MAXQDA code. It is unexpected to find out that in their diaries the students repeat what they learned during the classes and provide a summary of contents covered during the classes. While it is true that most of the contents outlined in the didactic units were presented to the students not in the form of a lecture, but rather in the form of interaction, case-studies or learning-by-doing, it is still notable that the students refer to them in their diaries. The analysis of the second-level categories within this category shows that contents were an essential part of the MBA course and play an important role in the simultaneous acquisitions of skills. Graph 14 outlines the exact contents to which the students refer in their diaries:

Contents of the MBA Course: Units and Categories of Analysis



Graph14

6.5.6.1 Innovation in the Modern Economy

The MBA course is called "Business Innovation Management" and thus, its objective was not only to develop the competencies needed for innovation but also to transmit to students an understanding of the increasing importance of innovation in the business world today. From the first class, the students were introduced to the concept of innovation and to its consecutive domains during the next class sessions. It is not surprising that the students start their diaries by describing how they learnt about the importance of innovation:

> *"The first class of Business Innovation Management gave a deeper scope of the importance of innovation at the marketplace."* 11:278

> *"What new have I learnt during this class session? I learnt that innovation is the implementation of a new or significantly improved product or process, a new marketing method, which is connected with new behaviors, technologies and development."* 18:244

Over the development of the course, the students also gain an understanding of how innovation works in practice via examples and real success case-studies presented in class:

> *"To begin with new product, new ideas, new behavior, new technologies, new other ideas all of these are related to each other and innovation is not a linear process. Three phrases of a simplified innovation process are conception, analysis and planning; implementation, development, testing and prototype; production, digital strategy, marketing and market launch. Moreover, innovation is not about launching new products it is also about the process."* 9:449

> *"Moreover, innovation is more about implementation. If you have an idea, so it's not an innovation. It is very important to put your ideas in real life. And to see how they are going to work"* 6:188

Finally, it is also seen how the students see the practicality of innovation applied to their lives. By understanding what innovation really means, the students hypothesize how innovation will help them to succeed in their business careers:

> *"For me new ideas are very important, because we live in changeable world, in a world when today you can be the first, but tomorrow your product will be old and not interesting for people. So innovation management can help me to create some start-up, small company, maybe it will produce soft for different platforms like iOS, android, windows mobile etc."* 14:477

> *"I definitely can use these skills that I have learnt in real life, because nowadays our society became more innovative and I could increase efficiency and value, making my future organization better place to work."* 9:213

6.5.6.2 Relationship between Innovation and Creativity

The first didactic unit of the MBA course "Business Innovation Management" develops the students' creative capacity. However, it was important to not only help the students to become more creative but also for them to understand why being creative is important for innovation. Thus, the fundamentals of the relationship between innovation and creativity were transmitted during the first class. The students find this information important and practical:

> *"During the first class session, we introduced ourselves to each other, after that we started to discuss the innovations in business and creativity, also about the relationship between innovations and creativity. We were giving our opinion about creativity, shared our ideas about how we imagine the creativity, as well as how and when to use it. For me the first class, was very important, because earlier I had some ideas about the creativity, but my knowledge was too small, and this class helped me to improve my knowledge in this sphere."* 4:544

At the same time, by showing to students what creativity is, they start understanding better the process of innovation and the meaning of innovation by differentiating between innovation and creativity and becoming aware of the fact that, while creativity is without a doubt, important for innovation, it does not define the whole innovation process:

> *"Now I can say that creativity and innovation are not synonymous. Creativity is most often defined as the mental ability to conceptualize (imagine) new, unusual or unique ideas, to see the new connection between seemingly random or unrelated things. Innovation on the other hand, is defined as the process that transforms those forward-looking new ideas into real world (commercial) products, services, or processes of enhanced value."* 7:743

More importantly, as a result of discussions about the relationship between innovation and creativity, the students gain awareness of the importance of both and motivation to develop the creative ability in themselves. The feelings the students share in their diaries confirm that:

> *"Last class session has made me think about the importance of creative thinking way in making and improving your business. It means that you should be distinctive from your competitors in order to hold your position in the market."* 7:743

As the course develops, and the students are introduced to other aspects of innovation and develop the innovation competencies (e.g. entrepreneurship), the understanding of the relationship between innovation and creativity helps them put all the pieces together in the innovation process:

> *"To create means searching for new activities all the time, without worrying about the extent to which it is difficult to realize, and if there are any necessary resources to implement it. But in the entrepreneurship creativity is connected with the ability to implement innovation, take fruitful idea, and force it to work in practice."* 5:793

6.5.6.3 The Concept of Branding

The concept of branding was introduced into the MBA course based on the recommendation of one of the experts because it would be easier for the students to understand the process of design thinking for innovation. Five students wrote in their diaries some comments about this new knowledge acquired and interconnections for understanding the process of design thinking. The students share in their diaries the knowledge acquired through the prism of the concept absorption as if they continued thinking out loud:

> *"All brands want and need consumers and they are mainly selling a feeling. Loyalty is of utmost importance to the branding managers and creating that loyalty requires innovative strategies that constantly capture the attention of the consumer. Hipsters vs. Nerds: Cultural background influences the individual input and output. The Experience and Space Time and Location develop the Perception (Impact, attraction or memory). All memories have space and a place in mind. Visual Merchandise is important in regards to positioning in the consumer's mind."* 19:555

Other students mention the concept of branding introduced in class incidentally, between the lines, in the context of something else which came into their mind as a memory from the class: *"Another thing I learned is that space conveys emotions which is an important concept in branding when choosing a specific location about something;" "Other aspects covered were branding, appealing with emotion, and we watched a video about hipsters vs geeks." "During this class session I've learnt how to make advertising campaign in short time. I've learnt that brands, artists, singers, etc., all famous people and enterprises need fans!"* (10:148)

As seen, the students refer to the concept of branding as something that they *"learned"* which could be interpreted as getting to know something about a new knowledge domain.

6.5.6.4 Developing an Opportunity and Rapid Prototyping Tools

Every good business idea is based on an opportunity on the market. It is important to first discover this opportunity, develop it into a product and then test this newly created product during the early stage of its development in order to adjust it to the market needs and guarantee the success of the business enterprise. This whole idea was presented to the students during the MBA course in the form of theory which was later applied by them in practice during the work on the Final Project. Thus, the students share in their diaries how they got to know about the concept "business opportunity" and "rapid prototyping tools" – testing of the product. After gaining awareness of the importance of a good opportunity, the students hypostasize about it in their diaries:

> *"Sure, I understand that the first thing I need to start my business is to solve my future consumers' problems. Maybe we must understand what products are in trend or in fashion now, because people don't want to buy old products. They want to be new, so we will offer them new products."* 14:278

> *"Moreover, we were watching the video with Alex Osterwalder, whose main message was to reach an audience with an understanding that business fails when you crash with the clients' needs. We need to keep in touch with our customers, try to feel their tastes, preferences and analyze many things, for example user behavior, or mentality, as all actions are needed to be accurate in order for the solution to be viable."* 5:411

After understanding the importance of the right opportunity and satisfying the market needs, the students got to know the concept of testing and learned about rapid prototyping tools, all of which they also discuss in their diaries:

> *"…also, that the process of identifying and testing assumptions should be ongoing when building a startup. Yes, in any enterprise time is money, but in this case better to learn the process, test the product and in this way avoid wasting time and money after building things people don't want."* 5:298

> *"Recognizing and understanding the importance of testing the new product can help to figure out if the product works in real environment and if it meets the requirements of the customers."* 11:637

The video of Alex Osterwalder shown to the students in class, had a great impact on them in terms of understanding the innovation process and the importance of testing in such way that several student sum it up in their diaries:

> *"What I found very useful during the class was the video of Alex Osterwalder's presentation, speaking about a new approach to business models. In general, the process of creating new businesses and entrepreneurship focuses on the importance of testing and simulating products in real-life situations before building them. It will take you more time, but it will help to avoid future crash. Furthermore, the usage of prototypes will help to understand better the materials, the process of working together, and how do products or service behave. No matter if it is tangible (product) or intangible (service), organizations can have different models, through which they need to go to find the most suitable."* 11:1016

The students related these concepts learned with some real examples they saw in real life:

> *"And in fact in real life we can see many companies which flailed as they did not take the time to quickly test risky assumptions before jumping into the building."* 5:606

There is also evidence that later, when the students started working on their Final Projects, they were trying to apply the concepts learned into practice:

> *"We tried to think like consumers, so we asked ourselves what we want to buy, what services we prefer."* 14:102

6.5.6.5 Business Model Canvas

Business Model Canvas (BMC) is a powerful business tool introduced to the students during the "Business Innovation Management" course based on the recommendation of one of the experts. The tool later became one of the central tools the students used in order to realize their Final Projects. Thus, the tool is mentioned by many students in their diaries. First, the students were presented with the concept of a business model and BMC being a tool for designing a model, one student describes the lesson learned:

> *"The process of developing a business model is a part of the business strategy. And with the help of Business Model Canvas each enterprise can describe their own business model, find out weak sides and understand what is really important for its business."* 5:248

"I have learnt about very useful and important strategy, which name is The Business Model Canvas. The Business Model Canvas is a strategic management and entrepreneurial tool. It allows you to describe, design, challenge, invent, and pivot your business model." 8:825

"The application of Business Canvas Model is a crucial for a company. The model sketches out visually your business model before starting building the real business plan. The idea of the model is very simple. It describes 9 crucial elements…" 11:639

After getting to know the idea of BMC, it was explained to the students, how BMC can be applied to their Final Project, as one of the students recalls:

"During the last class session we were observing the Business Model Canvas, which allows us to describe, design, challenge, invent our business model, in our case, we can use it in our future Application. So we went through each part and got to know which questions we have to answer inside the Canvas." 5:290

Later on, the process of using and designing BMC was understood by using learning-by-doing methodology – the students were asked to design BMC in groups for their own project idea. The students found this assignment extremely handful as it helped them to understand their own idea better, its strengths and weaknesses:

"During this class session I have learnt how to do a business model canvas of our application project. We were discussing more deeply our channels, key partners, key activities and so on. It helps us to understand more the concept of our project." 9:245

"The Business Model Canvas is a very useful tool for real life situations as it lets you see your ideas in a more ordered way. In real life it can be used for any innovative business idea that you have as you can consider it further with the Business Model Canvas model and immediately see if you should progress further with the project." 10:337

The students also describe the process of working on BMC and particularly its technical parts:

"So first of all, we should determine the consumers. After that define which values they are going to buy from us, what marketing channels send these values and what kind of relationship we build with them. We calculated revenue streams and which resources we needed for this. Then wrote down the key actions that we needed to work on…" 18:616

As a result of the class, the students express their satisfaction with the fact that now they know about BMC and how to do it:

"I have improved myself in a sense that I am more familiar with the Business Model Canvas and I am able to use it efficiently." 10:126

"The Business Model Canvas is a tool which I can use in the future to put my ideas down on paper so that I will improve my reasoning going forward." 1:145

6.5.6.6 Storytelling and How to Face a Challenging Presentation

While the teaching of presentation skills was through learning-by-doing methodology, while practicing the presentation skills the students received a basic theory on how to face a challenging presentation and what aspects of it to take into account. This type of contents was introduced for the practical reasons and nature of the MBA course – the students had to present their Final Project publicly; but more importantly, storytelling as a concept is important for selling your new product or even an idea to the potential investors and the market in general, all of which constitute the competencies of a successful entrepreneur. The students got this idea very clearly:

"The presentation skills are extremely essential for you to succeed professionally. In today's business environment, the competition in the workplace is getting more competitive. It is no longer enough for you to have the necessary capability to do the job, you should also be able to talk well, write well, and present yourself attractively to your superiors. What is better way than to let other people know what you're capable of by presenting a great idea or a plan during a meeting?" 5:483

Apart from the meaning why presentation skills are important, the students also got theory on how to present. The class had the following format, as one student recalls:

"For this class we were assigned to do a presentation, the topics were given to us and we had to form a group for it. Our group had chosen the topic of conflict resolution. So, before the presentations started we were taken again to the basement and Elena taught us the posture, the things we should and shouldn't do during a presentation. After that we went back to class and started with the presentations. Every group had done an amazing presentation." 2:454

As seen, the instructor was giving a theoretical part which was immediately applied into practice. As a result, the students got practical and theoretical knowledge out of this class:

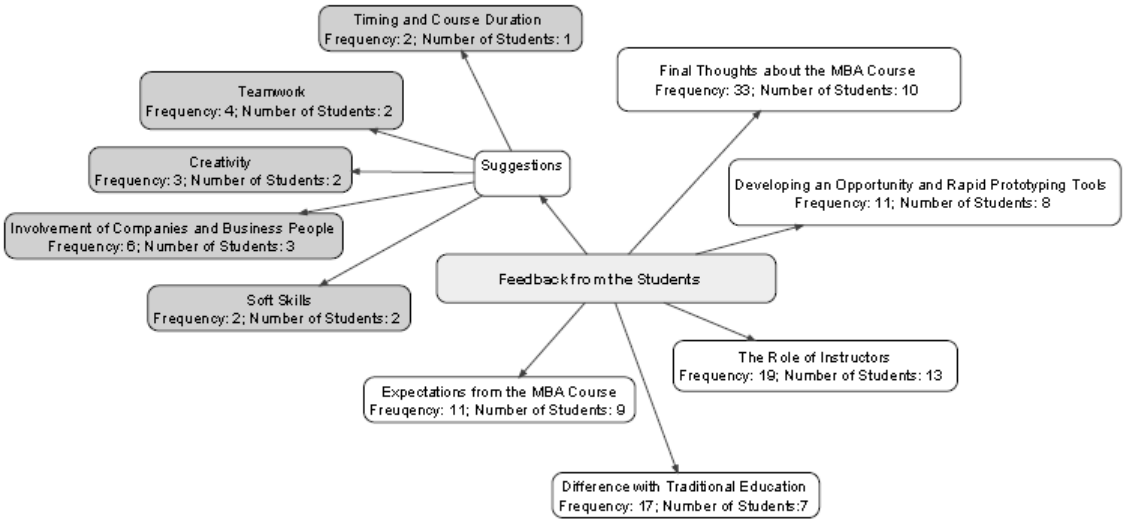
"I learnt some new tips in doing presentation process. For instance I didn't know that in business when you put your hands below the belt is a taboo. I've learnt how important body language in public performance is." 6:213

"The body should be aligned in a straight line, with the feet balanced and not crossed or too open and the shoulders on the other hand should be open which could be done by opening your palms. It is important to use hand gestures to emphasize your phrases and to establish a connection with your words. Your hands should be kept above your waist line. I also learned that the presentation should be more of a dialogue, for that reason eye contact should be made with the public." 10:729

6.5.7 Feedback from the Students

When analyzing general feedback from the students regarding the MBA course, several categories emerged: many students start their diaries by sharing their **expectations** from this MBA course; further, there are many discussions related to the **difference of this MBA course and traditional education** as perceived by the students; **the role of instructors** is also discussed by the students. Finally, since the last question of the diary is related to **suggestions**, the students suggest some improvements to the course, and these are related primarily to different activities and competencies. At the end of the course and in the last entry of the diary, the students provide their **final thoughts** about the MBA course and whether it was useful for them or not.

Feedback from the Students: Units and Categories of Analysis



Graph 15

6.5.7.1 Expectations from the MBA Course

The name of the MBA course "Business Innovation Management" had provided the students with some ideas of what this course can be about, however, what had

dramatically affected their expectations from the course, was the first class session which was delivered in a non-traditional, different way which gave the students a chance to expect something really different from this course. The students describe that initially they did not expect anything special from the course and thought it would be related to *"computer sciences"*, however, the first class session showed them a different perspective and brought excitement about what to expect:

> *"After the class of Business Innovation Management I had so many emotions! I stayed positive for another half of the day till I fell asleep, even there was just one class. All the students thought that the class would be like a lesson of computer sciences and probably boring, but at the lesson I changed my mind."* 13:317

> *"I was expecting a structured lesson with a lot of specific examples of combining creativity and business. My outlook has now changed and I am keeping my mind open to what is to come."* 10:395

This first impression made the students think about what exactly they expect to improve as a result of the MBA course and what they expect to learn. Primarily, the expectations of the students are related to creativity and learning to think in a more innovative way. Thus, someone expects *"to get some new ideas"* and hopes *"to see as many creative and modern videos and situations as can be".* This, according to the student, makes her *"pretty sure that I will start to think wider, because I still have to see a lot…"* (3:222). Another student hopes *"to be a creative person by the end of this course"* because "*everyone has their own set of thinking and creativity and I believe everyone has a crazy imagination in their own perspective. I am hoping to bring this creativity out of me, as creativity or innovation is the most important aspect in business"* (2:361).

The students also intuit that the MBA course can help them to overcome stereotypes and fears created by previous experience and make them act with more personal freedom:

> *"I expect to be able to think more freely and openly about business related matters and break down some of the walls that may have been built from previous experiences in the work place and through education."* 1:208

The first class session left the students with the impression that the MBA course would also help the students with improving their entrepreneurship skills:

"I think this course will be very useful, attractive and I will apply knowledges that I will gain form this course in my future business." 8:137

"For me it is an interesting subject, I think it will help to generate new ideas and will help to start business in future." 14:120

However, the students expect not only to get courage to innovate or to think differently, but also to get practical knowledge on how to do things:

"You have to have not only thoughts and passion to innovate something; you also need knowledge about how to bring it into practice, which I hope to get during next classes." 18:160

Finally, the students hope that the classes will be as innovative as the first one as the majority enjoyed the approach used during the first class session:

"I liked and enjoyed every game during this session. I hope every session will be introduced in such innovative way, like the first one." 8:128

6.5.7.2 Difference with Traditional Education

As the MBA course was developing, many students more and more started comparing it with other classes and teaching methods they experienced previously. Their thoughts and impressions from a teaching method used during the MBA course naturally resulted in comparing it to other *"traditional"* courses.

There is evidence that for most of the students, the teaching approach and style used in the MBA course is something completely new and radically different from their previous academic experience. Thus, one student remembers how classes were organized in his undergraduate university and that he never before was asked to work in a team:

"First of all I want to say, that in the university I studied before we were never divided into groups, and everybody worked by themselves. Also in my past university teachers were asking each student personally, lessons consisted in the fact that the teacher called to the blackboard and asked questions about the previous lesson, or we were asked to retell the material covered during the last lesson. That is why for me the second lesson was very funny and interactive." 4:465

While enjoying the MBA course classes, but, nevertheless, being used to receiving *"theory"* during each class of the students' previous educational experiences,

the students could not figure out what exactly they were *"learning"* during the MBA course:

> *"As I said before, I think that we didn't do anything useful during the last class, that is why I don't have any idea how to use the knowledge gathered at previous lesson. Also I don't have any suggestion on the improvement of our class session, because I still don't understand the real reason why we are studying this lesson."* 4:312

This example demonstrates that some students associate learning with a traditional lecture format and exchange and memorization of contents, while not being aware of skills acquisition by means of other activities presented in class and an alternative way of learning. As a result, the students were left with a feeling that they did not learn anything new. As concluded from the analysis of the students' diaries, the students were trying to mitigate this feeling by suggesting that more theory should be given in class:

> *"...more attention should be paid to theoretical part. For the students without Management and Business background it is quite difficult to obtain and understand some practical parts. I strongly believe that mixing theory with practice will be more efficient and useful for students."* 7:317

> *"... we need theoretical part of lectures. Unfortunately, it is not shared on Global Business School Barcelona's web site. I will appreciate if you could start uploading lectures online like other classes."* 7:259

> *"My suggestion for improvement of this class is to have some content, something that I can take home and reflect on. Something that will expand my knowledge."* 10:157

The students are trying to imagine "Business Innovation Management" as a discipline, with its own foundations, concepts, definitions, and rules. They see the knowledge acquisition is the first priority:

> *"First of all, I prefer to get theoretical part and main definitions from the lecturer at class time. It would be more effective for the reason we can get answers for our questions immediately and some explanations with examples. I highly need to understand the basics of Business Innovation Management as a subject."* 7:317

> *"My suggestion for improvement of this class session would be covering topics about innovations that are most likely to become useful and profitable for people and giving us more detailed examples of what should we do as managers to make our plans come true... It would be great to get this knowledge during our classes*

because I think that without this knowledge you cannot work at any company and due to that make your dreams and plans come true." 18:627

Often, the students also associate the question "What new did you learn during this class session" with the new knowledge acquisition about which they provide details in their diaries:

"I am glad that now I know about innovation process. It consists of three steps: conception, implementation and marketing. During conception, you should do requirement analysis of users, create an idea, evaluate this idea and start to project planning. I recognized that implementation is all about development, prototype, pilot application and testing your product." 18:610

Despite a concern that not enough theory is provided during the MBA course and not enough knowledge acquired, over time the students start understanding the purpose of using other forms of learning during the MBA course and the results they are bringing:

"I cannot say that I learned something new, but every lesson, I realize that I'm starting to think more creatively, and the lessons that I have attended helped me in this, and I like it very much. I think that the development of creative abilities will help me later in my life, because if I approach any situation creatively, it will be easier to find solutions to a given situation." 4:379

It is notable that in the quotation above, despite realizing the new skills being learned, such as creativity, a student still believes that he did not learn anything new because, as seen from the analysis above, learning has a strong association with knowledge acquisition through contents.

However, later this student recognizes that the classes helped him to *"become more sociable"* and improve communication skills, but *"in terms of learning new"* the only thing is *"business model canvas"* which is, again, a business tool, a piece from the theory of management.

"...this course was not like all other courses, especially it differed from others because of the tactics and teaching methods used by Ari. There are a lot of aspects which I developed with the help of this course, but in terms of learning new I can say that I have never seen the business model canvas before, and it was the only new thing that I learned from this course. These classes helped me to become more sociable, if during the first weeks I had a problem in communicating with other students, at the end of course, all borders vanished and I was able to speak to any person without being shy." 4:628

Nevertheless, there are also students who could understand that learning is not only about knowledge but also about the new skills or improvement of skills:

> *"The innovative method of teaching though making the students to think, to talk, to create will help us to start to develop our skills."* 11:130

> *"Through effective method of teaching, I managed to develop my creativity, to develop my communication and collaboration skills, as well as my team-building skills."* 11:290

6.5.7.3 The Role of Instructors

The MBA course had one main instructor who was in charge of organizing the class sessions, assisting the students with their Final Project and grading, another instructor who delivered the sessions on soft-skills training, and three guest speakers (one artist and two entrepreneurs). All these people played a critical role in the achievement of the MBA course results, which is also confirmed by the students in their diaries. The students often refer to the instructors by mentioning their names while discussing one or another class session.

As seen from the diaries, the figure of the main instructor was in sync with the general idea of the course as of being about something different and innovative, thus the instructor was also different from the rest of the teachers, according to the students:

> *"It was very interesting, because Arianna is not a ''typical'' professor. She is very energetic, creative, fun. Therefore, every time she tries to convey the mood and ideas to us."* 14:174

> *"I was quite surprised by the way she was being positive and spreading positivity in class."* 2:90

> *"I am so happy to meet them and to have such a creative teacher, who really inspires and also has a lot of experience."* 18:119

These characteristics of the main instructor as well as dedication and making sure that everybody understood everything made it possible that for some students "Business Innovation Management" became one of the *"favorite subjects":*

> *"The subject itself is really interesting and the professor also is really enjoying explaining to us the topic, and it is very interesting to observe how she is trying to explain to us everything. And because of this reason, Innovation Management is one of my favorite subjects."* 12:461

"Honestly I have no suggestions for the improvement for our class sessions. I really like the way that Ariah is teaching us, and I think that Business Innovation is the most attractive lesson, which I ever had." 4:209

Considering a creative and easy-going style of the main instructor, the students found it strange that the instructor with a more formal style *"showed up in the middle of the semester"*:

"It was strange to have a different teacher show up with a completely different style of teaching in the middle of the semester and to play group games that weren't clear from the beginning…But later it was clear that her actions had meaning and reason and I was able to appreciate her efforts at creating a working team." 19:590

The experience of meeting with different instructors gave the students an opportunity to compare different teaching styles, which the students comment in their diaries:

"The class was a little bit different from what we did before with professor Ari, but it was interesting in the way of how different professors provide us with the information in the different way in the same subject. For the first time it was strange because the way how she teaches is different and really unusual." 12:317

It is also possible to see that different students prefer different teaching styles:

"I can now appreciate the directness and high expectations that I sense this professor has and prefer this to a laid back atmosphere. The techniques that we learned in 15 minutes can be used in many situations." 19:210

In general the students provide positive feedback about both instructors:

"Elena impressed for several reasons. First of all, I would like to emphasize that she achieved the goal to make from students a well-knit team." 7:142

"Our professor did a brilliant job, managing to improve our capacities as showing us some very useful tools." 11:107

One student used the diary space to thank the instructors:

"At the end I want to say that this subject was one of the most favorite classes which I have ever attended, and I want to thank our teachers for all work that they have done, and for work that we have done with their assistance." 4:220

6.5.7.4 Suggestions

The analysis of the qualitative data demonstrated that the students provided their suggestions related to the MBA course within the following course aspects:

- Creativity;
- Involvement of companies and business people;
- Soft skills;
- Teamwork;
- Timing and course duration;

With respect to **creativity**, some students expressed concern that they would like to have more creativity-related exercises in the course program; their suggestion is based on a very reasonable fact:

> *"Creativity is connected with innovation. Innovation is about thinking differently. Consequently, all of us are able to become more creative if we do some special exercises."* 6:242

One student says that while *"each class is different from each other, which brings more interest to a subject"*, she is, nevertheless, *"looking for some more activities for improving* [her] *creativity capacity"* (5:225). As a solution, one of the students suggests *"more discussion between students"* as *"through discussions we could develop our creativity"* (6:111). Another student as a *"creative task"* suggests *"making some excursions to some companies to understand better how they work"*, for example, *"to visit the publishing house"* (16:203).

Despite the classes being practical, some students express a wish for more learning-by-doing experience primarily with **involvement of real companies, business people and entrepreneurs.** For example, one student suggests organizing practical classes out of school or industrial visits to different companies and *"meeting up with their innovative managers"* because it would be *"very useful to learn from their experience and get some piece of advice"* (9:290). According to this student they need *"more practical classes, to do some tests for detecting our possibilities in innovation or play psychological games"* (9:463). Another suggestion is to *"discuss cases that you give in class session, and play role games according to these cases. So visually we will embrace more information"* (9:463). There is also a suggestion to *"ask the CEO of different companies to choose some students for internship there, because it would be a good experience for future entrepreneurs"* (9:148). Finally, one student found the guest lecture so useful, that suggested this speaker/entrepreneur should have been *"involved in the class from the start":*

> *"The speaker to be involved in the class from the start as I'm sure there could have been more analysis of our own apps and also more questions asked of Nacho's business. It was a valuable opportunity to hear from a business owner and more time should have been given to learn from his experience."* 1:297

With respect to **soft-skills** development, the only suggestion made is related to organizing for more practicing of presentation skills. One of the students recognizes that *"for the amount of time"* they had for learning presentation skills *"the class went very well"* (10:242). However, she would like to have more classes like this as they did not have enough time for *"mastering the skill of giving presentations"* and these skills *"are crucial for business career and confidence"*(10:242).

As far as **teamwork** is concerned, some students mention the need for more feedback from their classmates. One solution proposed is to do it *"anonymously"* – *"to write it for each other, nobody would know about the content of the message, except those people who need to receive this feedback"* (6:248).

Another suggestion is related to the organization of teams. Before permanent teams were assigned to work on the Final Project, the students were randomly assigned to a team for teamwork during the class. Thus, one student finds this practice inefficient:

> *"What I want to improve? I think we must create permanent teams, without changes, because you always know which skills they have, who can be a team leader, creative director, generator of ideas, who can be a designer or who is constantly updated with all world news. If we change every time our teams it is not good, because every time we need to discover team members newly in new teams."* 14:390

Finally, there are also suggestions related to **timing and duration of the course**. The main concern is that *"it's too short time to try to move this kind of material in four hours"* (15:191) or that ten weeks assigned to the MBA course is too little to develop different skills and competencies.

Despite different kind of suggestions, the students emphasize that they *"like the way that this class goes"* and do not want to change anything:

> *"I cannot say a lot about my suggestions for the Business Innovation Management class, because I really like the way that this class goes, the only thing that I can suggest is to help students a little with their final projects…"* 13:278

"I like this course and don't have any suggestions for improvement." 9:67

"I don't have any suggestions because every lesson becomes more and more interesting and I am starting to understand more and more things." 12:305

6.5.7.5 Final Thoughts about the MBA Course

In the final entry of the student diary, the students were asked to provide a general feedback on the whole course and if they felt the course helped them with the improvement of the innovation skills.

The analysis of the results shows that the students talk about *"change in the mindset"* as something that they experienced as a result of the MBA course:

"I became more open-minded, can freely express my ideas and have some innovation capacity in my mindset." 9:125

"My mindset has definitely changed after this course as I started looking at things and approaching them differently. For example, now when I'm stuck in a situation I try to analyze different aspects of it and try to come up with a solution. It has helped me with building confidence in what I can do. I'm really thankful to be part of this course." 2:346

Additionally, the students emphasize the improvement of several competencies, particularly, creativity, entrepreneurship, communications, leadership, and team-work, and to a less extent, understanding of modern technologies.

With respect to **creativity**, the students believe that the MBA course had an important impact on them in terms of developing their creative capacity, particularly, helping them be *"open to new ideas and adaptive to change",* being able to *"turn new and imaginative ideas into reality"* and to *"perceive the world in new ways"* (13:301). The general opinion is that *"almost every class was designed to encourage our creativity (example: the application project, the video making, the case studies and different presentations)"* (11:518), which had a positive effect on improving the students' creativity as stated in their testimonies:

"It has definitely increased my creativity skills, when I joined the course I was a little weak on that side and I hoped I could change that, I feel it has helped to think creatively and come up with creative ideas." 2:215

> *"This course had very strong influence on me in terms of creativity, especially in the development of the final project, as all groups had the task to develop an application. […] I am sure that I was able to pump my ability to be creative, as the project of our group has been named the best."* 14:572

> *"I understood that I have good innovative ideas which I can realize in the future. I started to think in a way that is more creative."* 18:210

The students believe that improving their creative capacity will help them in their future career:

> *"A wide range of creativity and innovation processes and other techniques in general can be used in real life and profession to deliver breakthrough solutions."* 5:366

Nevertheless, this student does not see any change in her creativity and believes that it is because she cannot measure it herself and it would be better if someone else could evaluate this:

> *"I can't see the change in the way that I was thinking about tasks, and I don't see changes in creativity skills, although I think that it would be better, if someone else could tell me if it changed or not."* 5:366

Entrepreneurship and practical skills of how to do business is another area the students mention in their final entry of the diary. There are two aspects the students mention with relation to entrepreneurship, one is the theoretical side of being an entrepreneur (a concept of entrepreneurship) and another one is thinking like an entrepreneur, having the ability, courage and drive to create new businesses. Thus, this is what the students have to say about the learned concept of the entrepreneurship during the course:

> *"From an entrepreneurship perspective I have learned a lot in this course, I learned how to make a plan from scratch, the idea, analyzing the resources, marketing structure and how to implement it. This is something I would use in my real life."* 2:243

One the other hand, there is evidence that the MBA course helped the students to start thinking like an entrepreneur and to *"be innovative, to be creative, to seek new, unoccupied niche business, to be brave, to believe in your idea, find a team and customize it to work"* (14:146):

> *"I think that I improved my entrepreneurship skills, because I started to think like an entrepreneur, and also new knowledge about different business models helped me to improve and develop my skills."* 4:397

> *"The main important thing that I learnt from this course is not to be afraid to realize the goals that I want, to be brave, to be risky, to be motivated, to be ready for everything, to be adapted for environment."* 7:303

The students appreciate the practical aspect of the MBA course and that it was built around concepts which can be used in real life:

> *"This dynamic course focuses on developing practical skills that will enable to lead change in future organizations with something new, how to make it, develop skills as an entrepreneur and deliver innovation."* 5:366

> *"The whole course is built on practical application of received knowledge and skills in the future job, as classes reflect directly a business environment. We have been taught how innovation process looks like, what it includes, how to use right your ideas or creativity, that the entrepreneurship is a global process, which includes a lot of stages and we have to be aware of many specific features which during the class each time are discussed."* 5:434

Considering that **teamwork** was an important component of the MBA course, the students mention it in their final diary entry and share how the course helped them to become a better team player and improve their leadership skills. Additionally, the course helped the students to understand the value of a team and being surrounded by people who share your ideas as well as the importance of a great team in achieving results:

> *"The course helped me to develop some of my personal capacities. Every class tended to that process - from the importance of being a leader, thinking in innovative way, being flexible, open-minded and responsible for your team. Furthermore, the class promoted the importance of having and creating an idea and not being afraid to show your position, sharing your ideas with others. I realized the value of having people, who believe in your idea, support it and even share it."* 11:613

> *"*[the course] *improved the ability to deal with the strengths and weaknesses of others and accept their criticism without taking it personality and foster my flexibility and ability to respond to different situations."* 11:518

Particularly, according to the students, the Final Project played a central role in improving the teamwork skills:

> *"Application task helped me to work in a team, to make decisions based on relevant information and by weighing the potential consequences, how to create a real plan and find way to reach a purpose."* 5:792

> *"A big role in developing of Team-Building played our final projects, where we tried to create an app, which will be useful for our target customers."* 4:447

Another aspect of improvement of soft-skills, as observed in the students' diaries, is **communication** and **leadership** skills. In the development of communication and leadership the students emphasize the important role of the special soft-skills training sessions they participated in during the MBA course with the instructor Elena:

> *"Also we have had two classes with Elena, who is a specialist in Leadership and Communication, these two lessons, where we were playing some games, acting in role plays helped me and, I think most of the students, to understand what is the leadership in reality, and what kind of person can become a leader."* 4:447

> *"I have already mentioned above these skills we received on professor Elena lectures, and then used them in our presentation, as well as all classes which were built on cooperation and where you worked with others. It means you have to communicate in proper way, take responsibilities if you have a big task or vice versa know how to rely on somebody, you have to know how to express your opinion and listen to others with maximum respect."* 5:423

However, according to the students, not only the classes with Elena helped them with the development of soft-skills, but the structure of the whole MBA course in general. More importantly, as a result of various activities, the students can relate the good interpersonal skills with the ability to be a successful entrepreneur:

> *"I received a variety of skills needed both for life and for working process. Lots of activities were based on communication, as it is essential to know in which way to deal with others, how to resolve differences between people in a positive, mutually beneficial way, how to present and carry out your information and make people be interested in what you are telling, how to manage others and listen to them, as the ability to listen can make or break you as an entrepreneur."* 5:792

> *"Because of this course I understood how important it is to know how to work in a group. I also felt myself a leader in my group and found ways of how to communicate with people in my groups who have another mentality and ideas."* 18:222

Modern technologies and their understanding, was not something the students mention a lot in the final entries of their diaries, except of one student who said that their *"project was based on creating an App for mobile phones"* so while doing the research he got *"a lot of knowledge on the technical side"* which gave him *"an idea of*

this kind of work, resources and finances you need for it" (2:216). Another student observes that he *"learned to look for new ideas for businesses that have been related to innovation"* (14:83) as a result of the MBA course.

Within other feedback the students provide in their final entries, it is important to note that the students believe that "Business Innovation Management" is *"a different type of a course – different in terms of teaching, tasks, design, and requirements."* As one student puts it: *"The structure of the class and the innovative way of teaching also played role in the development of my capabilities. It helped me to think, to talk, to share my opinion, to work in different teams, to deal with different emotions and to solve problems"* (11:737).

The students also mention that as a result of this MBA course, they understood the importance of innovation for the economy and of being innovative for their personal and professional success:

> *"Every class session made me learn something new or develop my current capacities. In today's competitive world it is very important to be different, be unique, be open-minded, not to be afraid to take risks and share your opinion with other."* 11:518

> *"Because "innovating process" includes all processes by which new ideas are generated and converted into useful products. For intense, in business we would be able to satisfy the needs and expectations of the customers, in a daily life we can solve our problems using different types of metrologies that we couldn't use before."* 13:559

The same student summarizes the impact of the course on her as helping her to become a person with *"extraordinary thoughts":*

> *"As a result of the course, I became a person with extraordinary thoughts, who can make a plan of things to do in the nearest future (5 years), who knows how to make the product sold, a good team player and a competitor."* 13:217

Finally, another student concludes that the course will help everybody to be one step closer to their dreams in business and thanks for the experience received during the "Business Innovation Management" course:

> *"I believe that everyone after this course will be closer one step to realizing their wishes in business. Thank you very much for this opportunity and experience."* 7:162

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The analysis of the qualitative data obtained from the students' diaries has provided rich complementary information which sheds more light on the quantitative results obtained from the questionnaires and the rubrics. The diaries demonstrate a clear change of attitudes, acquisition of skills needed for innovation, and a desire for an entrepreneurial action within the participants.

It is important to note that the categories which emerged as a result of the inductive analysis naturally evolve around the MEI competencies MBA course aimed at developing and the teaching methodologies used to develop these competencies. There were no unexpected categories which would be outside of the scope of the MBA course. This means that the course didactic objectives were well addressed and the teaching methodologies used provided a direct impact on the participants in such a way which would make the participants reflect upon actions taken in the classroom in their diaries. For example, "Assessment of personal learning gaps and critical thinking" is a teaching methodology to develop entrepreneurial capacity used during the MBA course – the diaries reveal that the participants share their thoughts about this methodology and an effect it produced in them. The same can be said about the rest of methodological approaches used in the MBA course.

Nevertheless, the number of incidents in total and the number of students mentioning one particular teaching methodology can indicate what impacted the students the most during the MBA course as well as it can serve as evidence of the amount of effort the students dedicated to one or another action during the MBA course (considering that the diaries were submitted weekly). Thus, an absolute record belongs to "Learning through transference and success case studies" as a teaching methodology to develop entrepreneurial capacity with a total of 60 incidents mentioned by 19 out of 21 students. The visits of real entrepreneurs and their life stories impacted the students; looking at real people who achieved success because of hard-work and proactivity made the students believe that everything was possible and the start of one's own enterprise was a realistic plan.

The second place belongs to the Final Project which also included a subcategory "Learning-by-doing methodology" as a teaching methodology to develop entrepreneurial capacity. These were mentioned 52 and 17 times by 16 and 12 students respectively. This is not surprising as Final Project was being done over the whole duration of the MBA course with students complementing the parts of the Final Project on the weekly basis. Final Project aimed at not only developing entrepreneurial capacity and understanding of modern technologies but it also had a significant role in developing the soft-skills through team-work and leadership development. Accordingly, teamwork is the third category with the most incidents and the number of students who mentioned it in their diary (53 times by 16 students). Based on the observations from the diaries, it can be concluded that success case studies brought into the classroom by the visiting entrepreneurs gave the students enthusiasm and motivation while the work on the final project with its components of learning-by-doing encouraged the students to work harder, be more persistent, assume commitment with the team and the results.

With respect to understanding of modern technologies, the initiative to invite technology entrepreneurs to the classroom was welcomed by the students. The students describe how this, first, made them think differently about modern technologies that surround us nowadays; and, second, how they learned from the advice the technological experts gave them. The work on the Final Project also helped a lot with understanding technologies and their commercialization. Thus, it can be concluded that in order for the students to understand modern technologies, there should be case studies based on real examples from the technological companies, the students should meet with the experts and exchange relevant and practical knowledge; learning-by-doing is a must with respect to technology commercialization so that the students could understand all the phases a technology goes through from its invention to its launch on the market.

In general, the analysis of the students' diaries demonstrated that the students felt they improved their capacity in all intended MEI competencies, particularly, creativity, entrepreneurship, soft-skills, understanding of modern technologies, and coping with diversity. The feedback the students provided was very positive: the students showed self-awareness of the gained skills and of how their mindset was changing over the duration of the MBA course. It can be seen from the diaries that the activities the students performed in class were not leaving them indifferent; on the

contrary, the classes provided a ground for a personal change and self-reflection. On the other hand, the course met the expectations of the students as the analysis of the first-week diary entries demonstrated – the students expected to become more creative and innovative and to have a course which would be different – all of which was fulfilled, according to the students.

Contents of the MBA course logically accompanied the leaning-by-doing activities, as the students believe. That is why the contents which were presented to the students were mentioned in the diaries regularly, often in the context of working on the Final Project or other activities in class. This created confusion in some students who felt they were not learning anything (understanding by "learning" a theoretical knowledge they could take home or a traditional lecture). Nevertheless, the definitions of different concepts provided in the diaries prove that the course helped the students with theoretical knowledge acquisition too; however, this knowledge was acquired not through reading a book but through a personal immersion into the concept by trying and testing it.

Contents were not the only thing which created confusion and perplexity within the students. "Difference with traditional education" emerged as a sub-category during the analysis which contemplates the thoughts of the students about the MBA course in comparison with their previous academic experience. Apart from that, the analysis of other categories and sub-categories revealed some negative reactions of the students to different activities and exercises presented in class. In the diaries the students shared how some exercises made them feel stupid and ashamed, how they were not understanding why these activities were there and what was the purpose of them. In some cases, the students later realized the meaning of these activities as the result of participation empowered them; however, in other cases, the students remained negative in relation to the activities they performed. Especially, the students found strange the games from Blaszczynski and Green (2012) as a teaching methodology for improving soft skills. This indicates that the weight of traditional academic experiences is very strong in students and that some of them were not ready to open their mind towards something new. Thus, it can be concluded that some better preparation for certain activities is needed; the change from traditional education model towards an innovative

one should be gradual in order to allow students to get used to it and make sure their mind is receptive to changes.

The diaries also revealed that the role of instructors in achieving the course objectives was important. The students were mentioning the instructors in their diaries and emphasizing their professionalism and good personal relationship they had with them. According to the students, the instructors were different as the nature of the MBA course was. The instructors were creative, open-minded, friendly, all of which encouraged the students and made them feel comfortable and relaxed.

To summarize, the analysis of the qualitative data allowed capturing what was happening in the classroom and in the students' minds, what kind of reactions and concerns the MBA course provoked in the participants. More importantly, it allowed documenting and understanding the process of MEI competencies development, the stages of skills acquisition and the difficulties faced by the students. This complements the quantitative data analysis in a way in which further improvements can be implemented despite a general positive result already obtained.

6.6 Triangulation of the Results

The use of different quantitative and qualitative instruments in this study allowed assessing whether the main objective of improving the MBA students' innovation capacity was achieved as a result of the intervention. The results viewed from the perspective of triangulation allow coming to objective conclusions with respect to the main objective and hypothesis of this study.

The results of the YISMT questionnaire showed that the students significantly improved their soft-skills (leadership) and entrepreneurship (energy and risk-propensity). The improvement of entrepreneurship is also proved by the fact that after the MBA course finished the students started taking actions in relation to launching their own enterprise. Thus, it can be concluded that the teaching methodologies chosen for developing soft-skills and entrepreneurship were optimal for improving the students' innovation capacity. In fact, what the students mention the most in their diaries are learning from real entrepreneurs, final project, and team-work experience: all are the teaching methodologies for improving entrepreneurship skills and soft-skills. The

students discuss how the meetings with entrepreneurs made them think about starting their own business, how the work on the Final Project helped them to learn the basics of entrepreneurship, and how they learned to communicate effectively and be leaders though team-work (including all specific team-work exercises from Blaszczynski and Green (2012) for developing soft-skills).

However, according to the results obtained from the YISMT questionnaire, there was no improvement in self-efficacy defined as self-belief, self-assurance, self-awareness, feelings of empowerment, social confidence. The mean of self-efficacy measured within YISMT questionnaire decreased from pre-test to post-test. While this decrease is not statistically significant, it may indicate that in the beginning of the MBA course the students felt too confident about their abilities as creative individuals, leaders, and entrepreneurs but as they were learning different skills and concepts during the course it made them more realistic about their capabilities. In fact, the incidents related to "Assessment of Personal Learning Gaps and Critical Thinking" and "Development of Self-Knowledge Though Reflection and Feedback" as teaching methodologies for developing entrepreneurship found in the students' diaries reveal the phases of this process. For example, one student describes that he realized that *"to be a businessman is not easy"*:

> *"This class session made me think: ...«How I will write my business plan or business model?». All this new information made me feel that to be a businessman is not easy, you should really work hard, brainstorm everything, read a lot everyday about start-ups and try more and more."* 9:305

Considering that the students improved their entrepreneurship skills, and self-efficacy is part of the entrepreneurship ability, it can be concluded that these teaching methodologies were important for enhancing the entrepreneurship abilities, despite the fact that the students did not obtain a statistically significant increase of self-efficacy within the YISMT questionnaire results.

Another area where no obvious improvement was observed is the development of creativity capacity. As outlined previously, the creativity exercise adopted from Cheung et al., (2006) showed no direct increase in the creativity capacity; the indicator "Creativeness of a solution proposed" in the practical exercise (case-study) increased slightly from pre-test to post-test; the increase in the mean of creativity within YISMT

questionnaire was not statistically significant. Nevertheless, the students' diaries reveal that there was an improvement in the creative capacity. For example, as one student describes: "*I have taken the consciousness I gained in the real world outside the class already… If something is done in one way this is not necessary the right way and there is always room for innovation even in our everyday lives." (10:459)* This and other examples prove that the creativity related activities presented in class were effective in awaking the students' minds towards a more creative attitude.

While it is difficult to conclude to what extent creativity improved based on the data obtained from the YISMT questionnaire and the practical exercises, the student diaries were helpful in revealing the aspects which could not be evaluated directly by other instruments. According to the feedback and thoughts provided by the students in their diaries, their perception is that the MBA course helped them to improve their creative capacity. For example, as one student describes:

> *"…after this class I started thinking innovatively. For instance, I see a bottle and start thinking about how I can make it more innovative, how I can do this chair 100% comfortable, how I can change this world as great people did by innovating."* 18:715

This and other incidents found in the diaries outline the way students' mindset was changing during the MBA course with respect to creativity; while some students directly admitted in the diaries that they felt their creativity was improved, the incidents showing transformation is an indication that the MBA course had a positive impact on the students' creativity capacity.

In general, the qualitative results obtained in this study reveal the experiences and feelings of the students during the MBA course which supports the findings quantitative data provided. The examples provided above clearly demonstrate the value of using students' diaries as means for obtaining qualitative data with the purpose to assess further whether the MBA study course methodologically adjusted to innovation improved the MBA students' innovation capacity, how and to what extent.

The use of exercises (case-studies) as an assessment tool was valuable from the point of view that, contrary to YISMT questionnaire (which evaluated general innovation capacity), the exercises made it possible to measure specific competencies or components attributable to the MBA study course. The data obtained by evaluating the

case-studies on business innovation with a rubric demonstrated that the students improved their results. This improvement was seen in all rubric indicators: understanding of business innovation, understanding of the innovation process described in the case-studies, creativeness of a solution proposed, innovativeness of management techniques proposed, and awareness of personal soft-skills. The completion of the case-studies and the analysis of the results proved that the MBA course helped the students to understand better the meaning of business innovation and the innovation process after an exposure to the related contents and materials during the classes. As the biggest improvement was observed in the innovativeness of management techniques proposed, it can be concluded that apart from a theoretical aspect of business innovation, the students developed practical thinking skills as a result of the intervention, knowing how to approach a problem related to innovation from a practical point of view. This correlates with the evidence found in the students' diaries: the definitions of different business innovation concepts the students provided demonstrate that the MBA course helped the students with theoretical knowledge acquisition and understanding of business innovation management issues and problems.

Both, quantitative and qualitative results provide a strong ground for concluding that the MBA course methodologically adjusted to innovation helped the students to improve their innovation capacity and the associated skills, which one more time confirms that innovation can be and should be taught.

7 CONCLUSIONS

The research conducted within the scope of this study is characterized by several significant achievements. First, the literature review conducted shed light to the current state of management education, and particularly, MBA, emphasizing the criticism business schools face nowadays, and determined how business schools can bring more value to the society by engaging with innovation; Secondly, the concept of management education for innovation was established in the course of the research and the teaching methodologies which enhance innovation were selected; Thirdly, the MBA course for developing the students' innovation capacity was designed and applied within a real classroom setting; Finally, the results obtained during the different phases of the research showed considerable improvements in the MBA students' innovation capacity.

The conclusions made after analyzing the results of this study are structured around the main outcomes related to four specific objectives of the study. The first specific objective was to design and validate an MBA course methodologically adjusted to innovation – the main conclusions made are related with the value the validated course design provides to the development of management education for innovation; The second specific objective was to deliver the validated MBA course methodologically adjusted to innovation – the conclusions made are centered around the factors which are important for the successful accomplishment of this objective; The third specific objective was to evaluate whether the MBA course methodologically adjusted to innovation improved the MBA students' innovation capacity – the role of different quantitative and qualitative instruments is discussed and the conclusions related to the development of different MEI competencies are made; The forth specific objective consisted in assessing whether the teaching methods proposed to enhance innovation produced such an effect in the students' innovation capacity – the conclusions are made placing emphasis on the extent to which the teaching methodologies selected are effective for different groups of MBA students. The conclusions related to each of the specific objectives of the study allow determining whether the main objective of this study, which is "**to improve the MBA students' innovation capacity by delivering a validated MBA study course methodologically adjusted to innovation"** was achieved.

Below are the conclusions derived from the work conducted during this study with respect to each of the specific objectives of the research.

Specific Objective 1: To design and validate an MBA study course methodologically adjusted to innovation which features the characteristics of management education for innovation.

The first question which had to be answered by all the researchers working in the area of education for innovation (including the author of this study) is related to the essence of the innovation capacity: what is it and what kind of skills and competencies constitute it? The majority sought the advice of experts in order to understand the characteristics of an innovative professional (not necessarily a business manager) (e.g. Chell & Athayde, 2009; Ivanova, 2012; Bement & Dutta, 2014).

The accomplishment of the first specific objective of this research consisting in designing and validating an MBA study course methodologically adjusted to innovation which features the characteristics of management education for innovation was a long process of constructing a theoretical framework from the limited literature available on what the essence of innovation capacity was and what kind of skills and competencies constituted it which started from the study conducted initially in 2012 (Ivanova, 2012). A deeper understanding of the nature of the innovation capacity allowed for establishing the characteristics of management education for innovation (MEI) – a field, which at that time was just starting to attract scientific interest (e.g. AACSB, 2010; Sullivan, 2011).

Nowadays, there seem to be a consensus with respect to the nature of the innovation capacity. The related studies state that what constitute it are the following abilities: 1) creativity (identified as an essential innovation attribute by all studies); 2) self-efficacy, energy, risk propensity (Chell & Athayde, 2009) which can be understood as entrepreneurial capacity by other authors (Ivanova, 2012; Hall, 2012; Moreno, 2014) and the ability to manage failure and identify problems (Bement & Dutta, 2014); 3) leadership (Chell & Athayde, 2009), soft-skills (Bement & Dutta, 2014; Ivanova, 2012; Cheung et al., 2012); 4) practical know-how acquired through applied learning (Hall, 2012; Moreno, 2014; Cheung et al., 2012); 5) understanding of modern technologies, primarily identified as an ability of business professionals (AACSB, 2010; Maritz et al.,

2014; Cheung et al., 2012). Additionally, this study identified that knowledge of innovative management techniques, change management, and the ability to cope with diversity also constitute the innovation capacity.

The next challenge was to understand how to develop the innovation capacity. A limited number of examples of the pedagogical approaches aiming at increasing the innovative attitude of higher education students led to a need of reviewing the best practices at the university environment for developing each of the competencies (particularly, creativity, entrepreneurship, soft skills, modern technologies, and coping with diversity) constituting the innovation capacity in order to build a common framework for increasing the innovation capacity of students in the context of management education. In this process, another challenge arose: up to date little is known about ways of developing some competencies which constitute the innovation capacity. While there is a solid body of research related to methodologies for developing creativity, entrepreneurship, and soft-skills, almost nothing is known about how to develop an understanding of modern technologies in business students. Primarily, the main doubt is related to what the innovation education studies call "teaching students the technical advances" (e.g. AACSB, 2010; Hall et al., 2013). Some studies emphasize the digital competence (Scuotto & Morellato, 2013) while some go as far as requiring an inclusion of general engineering and scientific principles and advances into the MBA curriculum (Thomas, 2007).

Once the work of identifying the best practices of developing the competencies constituting the innovation capacity was conducted, the prototype of the MBA course which features the characteristics of management education for innovation had to be designed with methodological coherence in mind – that meant that all the elements previously found for developing the competencies constituting the innovation capacity had to be compiled into a mosaic of exercises, case-studies, practical work, teaching methodologies, and assessment techniques which all together would result in a logical approach to helping the MBA students increasing their innovation potential. Considering that this approach was novel and its results were not measured previously, it was important to validate it by seeking an opinion of the experts who were both involved in education and innovation fields as part of their professional activity.

In general, the prototype design of an MBA course presented to the experts seemed appropriate for developing the innovation capacity; however, some recommendations and the corresponding changes were made. The most important of them were related with teaching modern technologies to MBA students.

Considering a limited number of the studies found which detail the methodologies for teaching modern technologies skills for innovation to management students, the recommendation of the experts included the involvement of technological experts in the teaching process so that the students could get familiar with the technologies through a person who would represent an example to follow. Additionally, according to the experts, both entrepreneurship and modern technologies required a learning-by-doing methodology, thus, there was no need to separate the didactic units covering entrepreneurship and modern technologies, but rather uniting them in one didactic unit where the central part would be a practical Final Project. The Final Project represented a business development of a newly invented iPhone application. Therefore, the approach chosen to teaching modern technologies consisted in technology commercialization (Nelson & Monsen, 2014; Levie, 2014; Phan, 2014) and at the same time in the use of Web 2.0 technologies (Thomas & Thomas, 2012). The experts emphasized that the teaching of modern technologies required the application of principles of lean management – the process of testing, adjusting, and improving, and creating more value for customers with fewer resources.

Other adjustments to the initial MBA course design included the use of "Business Model Canvas" – an essential tool for drafting business models of newly created products and services and understanding its weaknesses and strong points; understanding and application of the concept of branding; and the use of emotions in developing creativity.

The validated MBA course design methodologically adjusted to innovation which features the characteristics of MEI represents a valuable addition to the body of literature which describes study programs and courses aiming at improving the innovation capacity of higher education students. Particularly, it expands the study of Maritz et al. (2014) in which they describe an example of an innovation education program and its objectives, contents, and pedagogies used; the study of Bement and Dutta (2014) in which they seek to understand how to educate for innovation; the study

of Moreno (2014) who conducted an on-line course by applying a model aiming at enhancing the capacity to innovate. Additionally, the process described above answers the first question of this research: **"How can an MBA program be designed for innovation?"** The answer to this question is important from the perspective of the need for business schools to engage with innovation, as urged by AACSB (2010), Thorpe and Rawlinson (2014), Thomas et al. (2014b) – these studies call for business educators to take actions with respect to educating for innovation without providing clear steps to follow. While Maritz et al. (2014) describe a Master's degree designed for innovation, this degree is a separate study program the units of which cannot be separated and integrated into the MBA program. The MBA course presented in this study makes it possible for every business school to take the first steps and adjust their MBA programs to innovation without a need to redesign the whole curriculum or to make considerable investments.

Specific Objective 2: To deliver the validated MBA study course methodologically adjusted to innovation.

The combination of three components played a crucial role in the successful delivery of the validated MBA study course methodologically adjusted to innovation. These components were: 1) validated didactic units of the MBA course design which clearly outlined didactic objectives, evaluation criteria, contents, activities and exercises, methodologies to use, attention to diversity, space and resources, evaluation procedures and instruments, as well as each class session organization; 2) selection of the competent instructors who were in charge of delivering the MBA study course according to the didactic units; 3) participatory action research methodology (PAR).

With respect to the use of didactic units, they were important for specifying (and differentiating) the goals, content, methodology and evaluation scheme of each topic in class planning (Gómez & González, 2006). Didactic units provided clear guidelines to follow to the instructors which made it possible to make sure that the MBA course was delivered in line with the validated course design.

As later the feedback provided in the students' diaries proved, the instructors selected for the MBA course delivery were important for achieving the desired

objectives, primarily, for increasing the students' innovation capacity. Not only the instructors had to deliver the course in accordance with the didactic units, but they also had to be actors at times (e.g. establishing a non-threatening and supportive environment by acting informally (Dewett & Gruys, 2007); or to be a teaching methodology themselves (e.g. learning through transference – from one human being watching another (Cacioppe, 1998; Dugan & Komives, 2007). The later one especially impacted the students as it obtained the highest number of incidences (60) in the students' diaries. Moreover, the delivery of some exercises (e.g. games from Blaszczynski and Green, 2012) required being open-minded, active, and not shy to perform actions as part of the exercises in order to provide guidance and example to students.

Considering the variety of activities and exercises and the different scopes they represented, five instructors participated in the delivery of the MBA course. While there was one main instructor, the remaining four instructors were selected with an objective of choosing the right person for a specific activity (e.g. "Creativity Stream" (Pinard & Allio, 2005) was delivered by a practicing artist; learning through transference activities were delivered by real entrepreneurs). The main instructor, being an expert on innovation herself, played an important role in coordination efforts and assuring the coherence of the study process. Thus, it can be concluded, that for a successful reproduction of the MBA study course a similar approach to selecting instructors will be needed. In this sense, this study adds another dimension to the practical aspects of delivering education for innovation and of achieving its didactic objectives. While, Moreno (2014), Bauer (2013), and Maritz et al. (2014) describe the examples of delivery of the courses and programs designed for innovation, none of them emphasizes the role of instructors as one of the important components of conducting the courses and programs of this type of education. Additionally, the results obtained in this study correlate with recommendations made by Thorpe and Rawlinson (2014) and Rasmussen et al. (2011) who, after conducting their research, came to the conclusion that in order to teach and promote innovation and entrepreneurship the business schools should create links with industry and real companies/entrepreneurs. The selection of instructors who were coming not from the academy but from the business side played a crucial role in improving the innovation capacity of the MBA students. This conclusion also goes

along with the findings of Chell and Athayde (2009) who stated that teaching style could encourage young people to develop innovation skills.

Finally, participatory action research (PAR) as a research methodology in this study allowed to create a learning environment that connected theory and practice with action and reflection as an outcome of participating in the MBA study course, from the perspective of the students, the instructors, and the researcher. As PAR intends to help its co-participants to deepen their understanding of the social world in order to reflect and act on everyday challenges related to the studied phenomenon (Kemmis & McTaggart, 2005), both the researcher and the instructors were witnesses of this transformation within the MBA students who opened their mind towards innovative learning methodologies, demonstrated willingness to come up with innovative solutions, and provided thoughts about personal change in their weekly diaries. PAR as a methodology allowed the instructors and the researcher to work together on providing timely adjustments to the model of leadership in the classroom considering the mood and behavior of the students; on conducting discussions with the students in order to understand their concerns and learning progress, but most importantly, PAR dissociated the instructor and the researcher from the teacher/student traditional relationship model towards a truly equal environment where the participants from all sides engaged in continuous learning (learning from and learning about the subjects (Whyte, 1989). This played an important role in the delivery of the MBA study course from the point of view of not imposing anything to the students (as it often happens in traditional learning environments) but rather collaborating with the students and engaging together in the participation process. To some extent, this feature of PAR methodology correlates with the essence of education designed for innovation characterized by a non-threatening learning environment (Dewett & Gruys, 2007), team-building and collaboration (e.g. Rasmussen et al. 2011), development of self-knowledge through reflection and feedback from others (Allio, 2005).

The successful delivery of the MBA study course expands the number of examples on how to provide education for innovation described in previous studies and what factors play an important role in achieving the didactic objectives of this type of education. Particularly, following the example Bauer (2013) provides by describing an MBA program for innovation designed for Nestle employees, this study describes an

MBA course which can be applied and delivered at any business school without any specific reference to the employment environment of its participants, in contrast to the approach Bauer (2013) suggested.

Specific Objective 3: To evaluate whether the MBA study course methodologically adjusted to innovation improves the MBA students' innovation capacity by applying quantitative and qualitative instruments.

Contrary to Maritz et al., (2014) who state that assessing an innovation education program is one of the most challenging components, the results of this study indicate that an objective assessment is possible with a set of specifically designed instruments which consider different components of the innovation capacity.

To start with, the application of Youth Innovation Skills Measurement Tool (YISMT) (Chell & Athayde, 2009) as an educational assessment tool in this study provides an example of how to use this and similar tools in order to easily and quickly evaluate the effectiveness of innovation related study courses and programs.

In this study, the YISMT was used differently from the original study by applying it in two periods as a pre-test and as a post-test. While Chell and Athayde (2009) developed, validated, and applied this instrument with the objective to demonstrate that the innovation capacity of a particular group of young people or an individual can be measured, in this study the instrument was used twice in order to measure the change in the innovation capacity over a period of time and as a result of participation in the MBA study course. This approach is similar to the one presented by Moreno (2014) – he used a pre-test – post-test design to evaluate the effect of the online course designed for innovation. Nevertheless, he did not use any specific validated instrument, but rather, closed and open questions to assess whether the course objectives were achieved and whether the methodologies used were optimal based on self-evaluation of each student. Considering that YISMT is a validated instrument which measures the level of innovation capacity at each particular moment, the results it provides may be considered more objective with respect to the effect the education designed for innovation has on the students.

Another method of assessment applied in this study is the use of rubrics in order to evaluate the data collected though practical exercises. Similarly to McCracken et al. (2001) who evaluated the programming competency the students obtained, the use of compatible or similar exercises in this study evaluated with a rubric in pre-test and post-test proved to be a reliable method of assessment. The use of specific exercises allows for measuring specific competencies or components attributable to a particular educational course or program. Therefore, the use of practical exercises as a measurement tool made it possible to assess the innovation capacity applied to the context of business education. While other studies which assess the impact of education for innovation are concerned with the innovation capacity in general (e.g. Maritz et al., 2014; Bement and Dutta, 2014; Hall, 2012; Moreno, 2014), this study demonstrated that apart from measuring the general innovation capacity, it is also possible to assess the specific innovation skills and understanding attributable to a particular area or a profession. Thus, a similar approach can be used in other areas, for example, engineering, medicine, etc. because practical exercises (case studies) can be related with that specific area of study in order to detect whether the students can use their innovation capacity in relation to their current/future profession.

Finally, the use of diaries demonstrated the value of qualitative data which helped to assess further whether the MBA study course methodologically adjusted to innovation improved the MBA students' innovation capacity.

The results obtained in two periods of YISMT questionnaire application in this study demonstrated that there was a strong tendency towards statistical significance with respect to the increase of the Total Innovation Score (TIS). Similarly, there was a statistically significant increase in some of the competencies constituting the innovation capacity, particularly, leadership and energy (entrepreneurship) for all participants and risk-propensity for those individuals whose close family did not own a business.

The completion of practical exercises (case-studies) and the analysis of the results demonstrated that the students improved their understanding of business innovation processes and self-awareness related with innovation competencies as a result of participation in the MBA study course.

While there was no direct improvement of creativity based on the results obtained from the creativity exercise and the YISMT questionnaire, the students' diaries demonstrated the opposite – the students described incidents confirming that their creativity was improving as a result of the MBA study course.

In general, the analysis of the students' diaries showed that the students felt they improved themselves in all the competencies constituting innovation capacity and which were included in the didactic objectives of the MBA course; these are creativity, entrepreneurship, soft-skills, understanding of modern technologies, and coping with diversity. The feedback the students provided was very positive: the students showed self-awareness of the gained skills as well as of the personal transformation towards an innovative attitude within the environment created by the MBA study course.

The results obtained allow for accepting the hypothesis of this study:

After attending the MBA course methodologically adjusted to innovation the students will demonstrate improved innovation capacity and skills.

The results obtained by applying both, quantitative and qualitative instruments, demonstrate that the participants of the MBA course improved their innovation capacity and the competencies associated with innovation. This conclusion goes along with conclusions provided by previous studies – innovation can be taught and when it is taught appropriately considerable improvement in the students' innovation capacity can be achieved (Moreno, 2014; Bement & Dutta, 2014; Chell & Athayde, 2009).

Objective 4: To assess whether the teaching methods selected to enhance innovation produce such an effect in the students' innovation capacity.

As mentioned above, the best practices at the university environment for developing creativity, entrepreneurship, soft skills, and modern technologies (the competencies constituting the innovation capacity) were reviewed. Out of those teaching methods and examples found in other studies, some were considered and used in the design of the MBA study course methodologically adjusted to innovation.

Taking into account the results of quantitative and qualitative nature obtained in this study, it can be concluded that the teaching methods selected to enhance innovation

produce such an effect in the students' innovation capacity, which answers one of the questions of this research: **"Do the teaching methods which characterize management education for innovation improve students' innovation capacity and skills to a higher extent?"** Nevertheless, there are some important findings which need to be analyzed.

Firstly, there is an important finding related with the students' intention to innovate. In the study of the authors of the YISMT instrument (Chell & Athayde, 2009) students who had expressed strong intentions to pursue an innovation-oriented pathway beyond school or college scored significantly higher on the measure of innovation capacity. The authors concluded that this demonstrated that the measure was able to identify students that at that point in time showed a stronger intention to pursue an innovation pathway. Following these conclusions, this study explored whether the students with weaker intentions to pursue an innovation-oriented pathway can improve their innovation capacity after participating in the MBA course designed for innovation. Unfortunately, the results of the YISMT questionnaire demonstrated that the MBA course was not effective for the students who did not have a strong intention to innovate in the beginning of the course: these students did not obtain a significant increase in any of the YISMT scale dimensions nor in the Total Innovation Score. Therefore, some other approaches and methodologies are needed for the individuals with weaker innovation intentions. Educators should be distinguishing between students with stronger and weaker intentions to pursue an innovation-oriented pathway in order to take care of diversity and the needs of different students as well as in order to develop appropriate education strategies for different groups of students. So far, the current studies on education for innovation do not distinguish between different groups of students or the effect the courses and programs designed for innovation have on students with different needs (e.g. Moreno, 2014; Bauer, 2013; Maritz et al., 2014). The findings provided in this study along with the conclusions made by Chell and Athayde (2009) make it clear that not only there should be a discussion on what education for innovation should be, but also on how to make sure that all students can improve their innovation capacity, regardless of their initial predisposition, capacity, skills, and talent.

Secondly, it was found that the MBA course was more effective for the students whose close family did not own a business as they experienced a significant increase in

the TIS in contrast to those students who came from an entrepreneurial family. This result differs from the one provided by Chell and Athayde (2009). In their study parental experience of self-employment was not associated with students' scores.

Nevertheless, contrary to Chell and Athayde (2009) who just measured the innovation capacity without attempting to influence it, the result obtained in this study could be explained by the fact that those students who came from entrepreneurial families obtained significantly lower grades in the MBA study course than students whose close family did not own a business. The study also found that obviously only those students who had good grades experienced a significant increase in their TIS. Thus, because the performance of the students from entrepreneurial families was not high, they did not experience a significant increase in their Total Innovation Score. Therefore, for some reason the students whose parents or siblings owned a business were not motivated enough to perform well in the MBA course. The contrast between the students whose close families owned a business and the students whose close families did not own a business is also seen in the fact that only students who were not coming from entrepreneurial families significantly increased their risk-propensity. The teaching methodologies for developing entrepreneurship were directed at developing entrepreneurial mindset which, within other aspects, includes tolerance of uncertainty, ambiguity, risk, and failure (The Quality Assurance Agency for Higher Education, 2012). Thus, the results obtained in the study may indicate that the students who come from entrepreneurial families already have this mindset and if so some activities presented during the course related to entrepreneurship were not interesting to these students as they knew a lot about entrepreneurship though their family. Another explanation could be that these students felt too confident and did not dedicate enough effort to the activities and exercises. Therefore, further research is needed in order to find out what kind of teaching methodologies motivate and engage the students who come from entrepreneurial families and who already have entrepreneurial mindset.

Nevertheless, taking into account the evidence the students' diaries provided and the YISMT questionnaire results which indicate that there was a strong tendency towards statistical significance with respect to the increase of the Total Innovation Score (TIS) for the whole group of students and a statistically significant increase of the TIS for the students with a stronger innovation pathway and also for those students who

were not coming from the entrepreneurial families, it can be concluded that the teaching methodologies selected for the MBA course enhanced the students' innovation capacity.

To conclude the above, contrary to the common belief, the pedagogy employed in the management education for innovation programs does not necessarily need to be only innovative and can be traditional with such components as seminars, workshops, case studies, and teamwork (Maritz et al., 2014). The results obtained in this study confirm the conclusions of Maritz et al., (2014) and demonstrate that traditional pedagogy can be as effective as innovative one for developing the innovation capacity; however, a certain balance is needed between traditional and innovative pedagogy in order to obtain optimal results. Following Lobler, (2006) who states that entrepreneurship cannot be taught with traditional methods, the findings of this study indicate that if only traditional pedagogy had been used in the MBA course, the positive results of obtaining an increased innovation capacity of students would not have been obtained. For example, it has been demonstrated that entrepreneurial competency can be best acquired when learning-by-doing components are present (non-traditional pedagogy) (Rasmussen et al. 2011; Pittaway & Edwards, 2012; Bell, 2009). By introducing in the MBA course a practical Final Project based on the applied learning methodology, the students experienced what it was to be a real entrepreneur, increased the level of energy and motivation, and understood the concept of risk. Nevertheless, before exposing the students to some innovative pedagogy and teaching methods, some awareness has to be created among the students. In this study, the students' diaries revealed that some activities and exercises were not taken seriously. Some students were feeling that they were not learning anything during the MBA course as there were almost no lectures or notes-taking, and some students were disappointed in the beginning of the MBA course until they realized the personal changes the exercises and activities were provoking in them.

The conclusions made above point out that the main objective of this study was achieved:

To improve the MBA students' innovation capacity by delivering a validated MBA study course methodologically adjusted to innovation.

The MBA course designed and delivered in this study proved to be an effective educational intervention for improving the students' innovation capacity and can be applied in the future with the purpose to promote innovation and the effect innovation has on the economies and the societies.

Globalization of business activities demonstrates the power of innovation in today's global economy as means for improving companies' competitive position and sustaining economic growth (Archibugi, Howells, & Michie, 1999; European Commission, 2010; Carayannis & Grigoroudis, 2014; Fonseca & Lima, 2015). At the same time, promoting the strategies that make innovation real is an essential role of business managers today – it has been widely accepted that the success of an organization operating in today's economy suffused with innovation at all levels highly depends on the vision adopted by its' management and their ability to meet the innovation challenge (Institute of Competitiveness and Prosperity of Canada, 2009; Ministry of Economic Development of New Zealand, 2010; Department of Innovation, Industry, Science and Research of Australian Government, 2009; Bloom et al. 2007; The UK Commission for Employment and Skills, 2013). Therefore, innovation is directly proportional to the attitude and skills of managers – finding, evaluating, acquiring and integrating innovation from internal and external sources (e.g. supplies, other companies, universities) and promoting the culture of innovation within an organization is increasingly a function of management today (The Strategic Counsel, 2004).

In this context, business schools should reconsider their current approaches to educating managers and adopt new educational strategies in order to remain relevant to the business world as well as to contribute positively to the economic and social development (Hawawini, 2005; Sullivan, 2011; AACSB, 2010; Thomas et al., 2014b). As multiple studies demonstrate, MBA programs at business schools should bring in new forms of knowledge and new types of skills for the future business leaders (e.g. Rubin & Dierdorff, 2009; Datar et al., 2010; Fernandes & Wood, 2015). Approaching this challenge from the perspective of dedicating resources to developing management education for innovation is a good strategy for business schools which can help them to sustain the value of business education in the 21st century (AACSB, 2010; Thorpe & Rawlinson, 2014). Putting more emphasis on innovation and aligning business degree

programs, and especially the MBA, with innovation will restore confidence within prospective students and employers who will see that management education can be relevant to the practice of management and can be a powerful force for enhancing the economic prosperity and bringing up managerial talent (Thomas et al., 2014b).

As literature review demonstrated, while there is recognition of the importance of management education for innovation, the research in this area is still scarce. Apart from the studies which state that engagement with innovation at business schools should become a priority (e.g. AACSB, 2010; Thorpe & Rawlinson, 2014), there are only a few studies which assess the current understanding of management education designed specifically for innovation (Hall, 2012; Maritz et al., 2014; Bement & Dutta, 2014). The body of research in this area is emerging by adapting certain findings from the parallel research areas, primarily entrepreneurship education (Maritz & Donovan, 2015).

While in the past there were doubts whether innovation can be taught (e.g. Bement and Dutta, 2014), the results of some studies (e.g. Moreno, 2014) and the results obtained in this study in particular demonstrate that innovation capacity can be acquired through a set of specially designed teaching methodologies. Because the research in the area is so novel and the programs and courses with measured outcomes are limited, the authors rely on teaching approaches and methodologies adopted from, as mentioned above, entrepreneurship education or the studies for developing innovation within other professions (e.g. engineers).

In general, the results obtained in this study go along with the rest of the innovation education studies where the main conclusion consists in the fact that innovation can be and should be taught and when it is taught appropriately considerable improvement in the students' innovation capacity can be achieved (Moreno, 2014; Bement & Dutta, 2014; Maritz et al., 2014). While some authors base their conclusions on the experts' opinions (e.g. Bement & Dutta, 2014), there is a number of examples with measured results demonstrating the increase in the innovation capacity of students (e.g. Moreno, 2014; Maritz et al., 2014) similar to this study.

The advances in the area of research within management education for innovation field provide new opportunities for business schools. The positive results obtained in this and other studies mean that today business schools can start to revisit

their objectives and vision as they relate to innovation as well as to evaluate their ongoing and potential contribution to innovation with the purpose to educate more innovative business leaders.

8 PROPOSAL FOR FUTURE RESEARCH

When participatory action research (PAR) is used for curriculum development, first new teaching approaches are designed, then applied and tested; after the prototype design has been tested and if it showed potential to solve specific problems in education it can be cyclically improved by applying newly-developed units (Burmeister and Eilks, 2013). The MBA course presented and tested in this study was the first prototype in the curriculum development of an MBA program designed for innovation. The results obtained with respect to the development of different competencies constituting the innovation capacity and the methodologies presented in order to achieve these results can be taken into consideration when designing an MBA program for innovation. For example, the study has demonstrated that the students improved their entrepreneurship and modern technologies skills: thus, the didactic unit where these competencies were developed can be expanded further and used as an independent course within the MBA curriculum. An important line of research would be to adjust a larger part of MBA curriculum to innovation and not to limit the development of the innovation capacity to one short course (which was the case in this study). After adjusting the MBA curriculum to innovation by introducing teaching methodologies which improve the innovation capacity to different units of the program it would be interesting to measure the results and see whether the innovation capacity could be improved to a higher extent over a longer period of time.

Another important line of research should consist in discovering how management education for innovation (MEI) can be effective for different groups of business students. This study has demonstrated that the MBA course designed for innovation was not effective for the students who had weak intention to innovate in the beginning of the course. Thus, understanding how to help the students with weaker intentions to innovate to improve their innovation capacity is valuable for achieving equal results of improvement within different groups of students. Additionally, it was found that the students coming from entrepreneurial families were not motivated enough to perform well in the MBA course: there is a need to understand how to motivate this category of students to achieve better results in the courses designed for innovation.

8. PROPOSAL FOR FUTURE RESEARCH

Developing a specific quantitative instrument for measuring not only general innovation capacity but also business innovation capacity would be a valuable contribution specifically to the area of management education for innovation. In this study two different instruments were used to measure the effect of the MBA course with respect to general innovation capacity and business innovation capacity. The use of one instrument could make it easier for business educators to assess the courses and programs designed for innovation.

Finally, it is important to test the MBA course presented in this study within larger populations of MBA students and to control for different factors which may affect the results. Thus, in this study the sample of students was highly entrepreneurial: the majority of the students expressed a wish to have their own business. It would be interesting to see the results of this intervention within the students with less entrepreneurial intentions.

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10 APPENDIXES

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APPENDIX I

Youth Innovation Skills Measurement Tool (YISMT)

Introduction

This questionnaire measures the innovative characteristics of young people. Your effort in completing this questionnaire is greatly appreciated. Your opinion is valuable so move quickly through each statement making up your response according to what you agree or disagree with.

Instructions

You will first be asked to indicate the extent to which you agree or disagree on a scale of 1-7 with the statements in Part One. When you have made your choice you should click on the number that represents your opinion.

1. Strongly disagree
2. Disagree
3. Mildly disagree
4. Neither agree nor disagree
5. Mildly agree
6. Agree
7. Strongly agree

For example,

1. I prefer tennis to football.

If you agree with this statement then you would click 6 “agree”. However, if you prefer football to tennis then you should click “disagree”. If you feel strongly then you should click on 7 or 1, depending on what your preference is.

It is the same process for each question. As you read the statement carefully you need to think how much you agree or disagree with the statement and then click the score that matches your preference.

Completion of the questions in Part Two seeks some information about you. Answering these is self-explanatory. The information you give will be treated in the strictest confidence.

Remember when answering questions for both parts of this questionnaire:

- Make sure you answer EVERY question, otherwise the questionnaire will not be valid
- Try to avoid the middle answer (4) in the 7-point scale
- Be as honest and truthful as you can. Don't give an answer because it seems to be the right thing to say

Tick the appropriate answer below ☒ or ☑

1. Q1							
I really like being leader of a group.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
2. Q2							
I like to get things done.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
3. Q3							
I would not say that I am a creative person.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
4. Q4							
I am often chosen to represent others.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
5. Q5							
I don't worry about risk if I am involved in something interesting.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
6. Q6							
I often lose focus before I get to the end of a task.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
7. Q7							
I tend not to give my opinion in front of others in case I'm wrong.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
8. Q8							
I like the feeling	Strongly	Disagree	Mildly	Neither	Mildly	Agree	Strongly

of accomplishing difficult tasks.	disagree		disagree	agree nor disagree	agree		agree
	☐	☐	☐	☐	☐	☐	☐
9. Q9							
Given my interests, I would always choose creative work beyond college.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
10. Q10							
People turn to me when we need ideas in class.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
11. Q11							
I usually feel I could have done more at the end of the day.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
12. Q12							
I am often chosen to be the team leader or captain.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
13. Q13							
People often describe me as energetic.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
14. Q14							
I intend to do something no one else has ever thought of before to bring about positive changes to society or the environment.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
15. Q15							
No job is risk-free, but on balance I'd prefer one that offered few risks.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
16. Q16							
It would be good to have a leadership role when I leave college and get a job.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
17. Q17							
I enjoy doing things well.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
18. Q18							
I have a strong imagination.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree

	☐	☐	☐	☐	☐	☐	☐
19. Q19							
Very often I can't be bothered to get things done.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
20. Q20							
I see myself taking a variety of jobs to explore my potential.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
21. Q21							
I intend to design or create something new, such as in music, software, dance, TV or fashion.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
22. Q22							
I enjoy persuading others to follow my lead.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
23. Q23							
Feeling inspired makes me work harder at what I'm doing.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
24. Q24							
The subjects I've chosen at school/college require imagination.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
25. Q25							
I feel frustrated if I haven't the time to complete the tasks set.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
26. Q26							
I see myself as taking a job and pursuing a career that I'll stick with.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
27. Q27							
I like organizing other people.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
28. Q28							
I feel a sense of accomplishment when I master a new skill.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
29. Q29							
I like putting ideas together to come up with something new.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐

30. Q30							
I feel that I have more energy than many of my friends.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
31. Q31							
When I leave college I intend to spot opportunities to make a lot of money.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
32. Q32							
When working on a group project, I do my best to persuade others to take up my ideas.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
33. Q33							
I feel that a lack of confidence sometimes hinders my progress.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
34. Q34							
I would like to invent something that is new to the world.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
35. Q35							
I dislike subjects that don't give me scope to express my ideas.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
36. Q36							
I wouldn't see it as risky to move between jobs.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
37. Q37							
People think that I am very confident.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
38. Q38							
I get irritated with friends that give up on things.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
39. Q39							
Project work gives me a chance to take a leading role in the group.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
40. Q41							
I like tasks that present me with a challenge.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
41. Q41							

I see myself as a practical, down-to-earth person.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
42. Q42							
My ambition is to set up a successful company that offers something completely new.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
43. Q43							
I think I am a rather cautious person really.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
44. Q44							
I often put off things that I know I ought to do.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
45. Q45							
I am usually the one who takes the initiative in the group.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
46. Q46							
If my friends give up on something I'll see it through.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
47. Q47							
I do not often day-dream but try to be realistic.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
48. Q48							
I tend to avoid taking part in sports that involve an element of danger.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
49. Q49							
I like having a lot of things on the go.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
50. Q50							
I believe I am self-assured.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
51. Q51							
I am good at having ideas.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
52. Q52							
I feel quite comfortable telling other people what	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree

to do.	☐	☐	☐	☐	☐	☐	☐
53. Q53							
I sometimes surprise myself and others with the ideas I suggest.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
54. Q54							
I'd describe myself as a risk-taker.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
55. Q55							
I usually feel confident that I can do what is asked of me.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐
56. Q56							
I have a huge amount of drive.	Strongly disagree	Disagree	Mildly disagree	Neither agree nor disagree	Mildly agree	Agree	Strongly agree
	☐	☐	☐	☐	☐	☐	☐

57. Q57

My age is:_____years old

58. Q58

I am: Male ☐ Female ☐

59. Q59

What is the highest type of qualification that you expect to achieve?

☐ Master
☐ PhD

60. Q60

How likely is that you will do any of the following things when you leave the University?

☐ Leave University and get a job straight away.
☐ Join a work-based training course (internship).
☐ Be unemployed.
☐ Be full-time home maker.
☐ Continue studying.

61. Q61

What are you likely to be doing when you are 35 years old?

☐ Working in a large organization.
☐ Working in a small business.
☐ Have my own business.
☐ Working in a profession (lawyer, solicitor, doctor, teacher, etc)
☐ Be unemployed.
☐ Other _____(please specify).

62. Q62

Has anyone in your family even owned a business?

☐ Mother or female guardian.
☐ Father or male guardian.
☐ Grandmother.
☐ Grandfather.
☐ Aunt or Uncle.
☐ Sister or Brother.
☐ Cousin.

☐ Other _____(please specify).

63. Q63

Are you seriously considering developing your own enterprise?

☐ Yes.
☐ No.

64. Q64

If so, what steps have you already taken (Please tick if step has been taken)?

☐ Sought support from family or friends.
☐ Secured some funds.
☐ Worked on your ideas in your bedroom or other personal space.
☐ Got a group together to help take your idea forward.
☐ Working to a plan.
☐ Exploring potential markets.
☐ Found some customers/clients.
☐ Other _____(please specify).

This questionnaire is complete. Thank you for your time.

APPENDIX II

Composition of YISMT Factors/Variables

CREATIVITY

[Q3] I would not say that I am a creative person

[Q9] Given my interests, I would always choose creative work beyond college

[Q10] People turn to me when we need ideas in class

[Q18] I have a strong imagination

[Q24] The subjects I've chosen at school/college require imagination

[Q29] I like putting ideas together to come up with something new

[Q35] I dislike subjects that don't give me scope to express my ideas

[Q41] I see myself as a practical, down-to-earth person

[Q47] I do not often day-dream but try to be realistic

[Q51] I am good at having ideas

[Q53] I sometimes surprise myself and others with the ideas I suggest

SELF-EFFICACY

[Q2] I like to get things done

[Q4] I am often chosen to represent others

[Q8] I like the feeling of accomplishing difficult tasks

[Q17] I enjoy doing things well

[Q23] Feeling inspired makes me work harder at what I'm doing

[Q28] I feel a sense of accomplishment when I master a new skill

[Q33] I feel that a lack of confidence sometimes hinders my progress

[Q37] People think that I am very confident

[Q40] I like tasks that present me with a challenge

[Q46] If my friends give up on something I'll see it through

[Q50] I believe I am self-assured

[Q55] I usually feel confident that I can do what is asked of me

ENERGY

[Q6] I often lose focus before I get to the end of a task

[Q11] I usually feel I could have done more at the end of the day

[Q13] People often describe me as energetic

[Q19] Very often I can't be bothered to get things done

[Q25] I feel frustrated if I haven't the time to complete the tasks set

[Q30] I feel that I have more energy than many of my friends

[Q38] I get irritated with friends that give up on things

[Q44] I often put off things that I know I ought to do

[Q49] I like having a lot of things on the go

[Q56] I have a huge amount of drive

RISK

[Q5] I don't worry about risk if I am involved in something interesting

[Q7] I tend not to give my opinion in front of others in case I'm wrong

[Q15] No job is risk-free, but on balance I'd prefer one that offered few risks

[Q20] I see myself taking a variety of jobs to explore my potential

[Q26] I see myself as taking a job and pursuing a career that I'll stick with

[Q36] I wouldn't see it as risky to move between jobs

[Q43] I think I am a rather cautious person really

[Q48] I tend to avoid taking part in sports that involve an element of danger

[Q54] I'd describe myself as a risk-taker

LEADERSHIP

[Q1] I really like being leader of a group

[Q12] I am often chosen to be the team leader or captain

[Q16] It would be good to have a leadership role when I leave college and get a job

[Q22] I enjoy persuading others to follow my lead

[Q27] I like organizing other people

[Q32] When working on a group project, I do my best to persuade others to take up my ideas

[Q39] Project work gives me a chance to take a leading role in the group

[Q45] I am usually the one who takes the initiative in the group

[Q52] I feel quite comfortable telling other people what to do

APPENDIX IV

Pre-Test and Post-Test Creativity Measuring Exercise

Please use your imagination and complete these two lines with your ideas. Try to do as many as you can. You have 5 min.

Example:

1 2 3 4 5

APPENDIX VI:

Explanation of the Exercises and Activities Used

A) "Morning-carpet" Activity (Heinonen and Poikkijoki, 2006)

Learning objective

To become visible in the group, to assert the right to be acknowledged in the group as a whole person (including feelings, values and interests) and to raise self-awareness about entrepreneurship.

Instructions

Students take their place on the floor on an imagined "morning carpet", on an extended continuum. Question (e.g.): "What is your attitude towards entrepreneurship?" Those who are very enthusiastic take their place at one end of the carpet, and those who feel negative or irritated go to the other end. Everyone is asked briefly to share his or her thoughts. The question ideally touches on entrepreneurship and entrepreneurial behavior.

Theoretical basis

The concept and phenomenon of entrepreneurship.

Student experience

The morning carpet is usually well liked because it gives everybody an opportunity to voice their thoughts and preliminary perceptions about entrepreneurship and to become acquainted with the group.

B) "Creative Mindworks" project (Karakas, 2010)

Students are asked to write innovative articles. This project enables students to enlarge their vision about breakthrough global issues and ideas in management and organization. Students freely select subjects they feel passionate and curious about and build analogies between management and as diverse fields as music, arts, politics, etc. This approach allows students to reflect on the diversity of issues, stimulate spirituality, flexibility, and positivity.

C) "Creativity Stream" with a Practicing Artist (Pinard and Allio, 2005)

The students actively practice creativity. The artists meet with students and use especially designed exercises, assignments and rehearsal practices to demonstrate the

essentials of art. The goal is not to make the students into artists but rather to re-stimulate their creative impulses and increase their confidence in their own abilities to imagine and create.

D) Symbols Learning (Heinonen and Poikkijoki, 2006)

Learning objective

To show how the concept of entrepreneurship has been internalized and to offer a taste of the entrepreneurial process to each participant, as throwing oneself into the deep end is part of it. To offer participants the opportunity to identify themselves as an entrepreneur of some kind.

Instructions

A large number of different small objects (toys, decorations, magnets), post cards or specific symbol cards are spread on the table, from where, after the briefing, the participants go and pick their own intuitively. They are briefed to look for something in the objects, that would best describe them as entrepreneurial actors, for example. Each one gives a short presentation in a small or the large group on what motivated his or her own choice.

Theoretical basis

The concept and phenomenon of entrepreneurship, entrepreneurial behavior, and self-identification as an entrepreneur.

E) Team-Building Activity (Heinonen and Poikkijoki, 2006)

Learning objective

To experience the different roles, skills and behaviors that are required in entrepreneurship and to understand themes closely associated with it (e.g. change, control of uncertainty, team work, commitment): getting organized as a team and building up a spirit of achievement within it.

Instructions

A lot of newspapers and tape are needed. The participants are divided into small groups, each of which is instructed to build one of the following:

- a bridge that can carry a fairly heavy book;
- a man-high tower that can stand without support; or

- a vessel with a funnel and a bridge.

The groups do not know the others' tasks. The facilitator moves the group members randomly between the teams in order to create feelings of change and uncertainty. Strict time limit is set for the activity.

Theoretical basis

Entrepreneurial behavior and skills, change and tolerance of uncertainty, entrepreneurial teams.

Student experience

This clearly showed that a human being is more committed to a project if she/he has participated in its planning and realization her/himself.

F) Aquarium Activity (Heinonen and Poikkijoki, 2006)

Learning objective

To critically look at and evaluate entrepreneurial skills, attributes and behavior, to experience different roles in entrepreneurship, and to get organized in a team.

Instructions

The group is divided into two. One half stays inside the aquarium and the other is sent out. The group staying inside (the observation group) gets the briefing papers. The other group (the task group) wait outside. The observation group are asked to choose a fairy tale, story or situation, on which the other group prepares a presentation. The observation group are briefed about observing, and each member observes one named person in terms of entrepreneurial skills, attributes and behaviors. The task group are called in and briefed as follows: "You are expected to prepare a 5-10-minute presentation of "X". You have 15 minutes for planning. Our task is to observe the planning and preparation process, so please speak loudly enough. The time begins now". The preparation and presentation phases follow and then the observation group gives feedback to the people they have observed. At the end there is a general discussion on the elements of entrepreneurship, the emergence of leadership, the different roles assumed by people, the functioning of the group, and the factors that tied people to the group or made them separate from it.

Theoretical basis

Entrepreneurial skills, attributes and behavior.

G) Games from Blaszczynski and Green (2012)

G1) The pyramid building activity

The purpose of the pyramid building activity is to develop communication skills and collaboration skills, two of the "four Cs". The materials required for this activity include ten paper or plastic cups, five strings, and one small rubber band for each team of five students. The activity requires about 20 to 30 minutes to complete and may be used at the secondary level as well as subsequent levels of instruction.

To introduce the activity, the instructor will ask the students if they have ever built a pyramid with paper or plastic cups without touching the cups with any parts of their bodies. Many of the students will answer, "No." The instructor will then respond, "Okay, here is your opportunity."

To explain the activity, the instructor shares the full instructions. The instructions include the following:

1. The students must build the highest pyramid by using the cups, rubber band, and strings in the shortest amount of time.
2. Everyone in the team must participate in moving each cup into place without touching the cup with any part of his or her body; only the string and rubber band may touch the cup.
3. The instructor further explains that the team has ten minutes of planning time to discuss the instructions, brainstorm, select a possible solution, agree with the solution, and simulate building the pyramid without using any of the materials.
4. The teams may not practice during this stage of the activity.

To practice the activity, the instructor indicates that the ten-minute planning time is up, and one student from each team may come to the instructor to pick up the supplies. The instructor says, "Go." The teams build the pyramids as quickly as possible. The first team to build the highest pyramid in the shortest amount of time is the winner.

To reinforce the activity, the instructor provides some type of reward, e.g., candy, extra credit, high fives, or late assignment pass. The instructor can lead a debriefing activity. The instructor may ask how many students provided ideas during the brainstorming activity. Another question might be, "How did you decide on the solution?" "Was it majority rules, unanimous agreement, or leader makes final decision?" The instructor can ask how the students felt while building the pyramid, what they might have done differently, and how they might have communicated differently. The instructor may ask if the activity were repeated, would the students use the same or another method to build the pyramid. Other questions may be asked based upon the observations by the instructor during the activity.

G2) Role play activity

The purpose of the role play activity for work ethic is to encourage students to contemplate the importance of honesty in their lives. The materials needed for the activity are name badges with pseudonyms for students and an observation handout. The activity requires about 30 to 60 minutes to complete and may be used at the secondary level as well as subsequent levels of instruction.

To introduce the activity, the instructor explains the situation. The situation is that student No. 1 has downloaded music from the Internet without paying for it. The first student shares with his or her friend that he or she just downloaded a cool song to his or her iPod. The friend (second student) knows that this is wrong but also knows that everyone is doing this. The friend is to discuss that downloading music without permission is unethical to the first student and to encourage him to do the right thing.

To explain the activity, the instructor distributes a handout with questions regarding the role play that the students of the class should watch for. For example, "How does student No. 1 react when his or her friend tells him or her that downloading music is illegal?" "What should student No. 1 do to be honest?" "How would you react as student No. 1?" "What do you feel the ethical action should be for student No. 1?" "Did student No. 2 explain in a persuasive way that downloading music without paying for it is unethical?" "What would you say if you were in this position as student No. 2?"

To practice the activity, the instructor has two students role play the situation in front of the class. The instructor places the name badges on the students, which are not the actual students' names. The students are actors. The students role play the situation.

To reinforce the activity, the instructor conducts a debriefing. First, the instructor removes the name badges from the actors so they are once again students. Second, the instructor has the students within the class answer the questions on the handout. Third, the instructor leads a discussion of the students' responses. The instructor insists that students make their comments using the actors' names rather than the true names of the students. The instructor also lets the actors share their feelings about the role play. The instructor then has the entire class divide into pairs, distributes name badges, and has the class role play. Following the class role play, the instructor leads a discussion regarding the role plays similar to the preceding one. The instructor concludes the activity or may extend the activity by sharing more situations involving ethical and unethical behavior followed by related discussion and encourages students to be ethical in all they do.

G3) Reflection journal activity

The purpose of the reflection journal activity is to have students write their feelings about the role play activity. The materials needed are paper and pencil/pen or a computer. The activity takes about 20 to 30 minutes and may be used at the secondary level as well as subsequent levels of instruction.

To introduce the reflection journal activity, the instructor asks the students to write in a reflection journal the answers to the questions located on the student handout.

To explain the reflection journal activity, the instructor may model writing his or her feelings in answer to one of the questions for the role play. The instructor could use an overhead projector as he or she writes in his or her journal, or the instructor could key in his or her response on a computer with an overhead projection system shown on the classroom wall where students can watch as the instructor keys in his or her thoughts.

To practice the reflection journal activity, the instructor gives the students time to write in their reflection journals. The instructor may walk around the room and ask individual students questions that may stimulate additional thought.

To reinforce the reflection journal activity, the instructor may praise the students for the amount that is written in their reflection journals. The instructor may also read the reflection journals and respond with positive comments and/or additional questions written in the margins of the journal or by using the reviewing tool feature in Microsoft Word.

G4) Listening activity

The purpose of this activity is to help students determine positive listening skills and recognize 'not listening' skills. The materials needed are a co-facilitator and chairs for all participants arranged in pairs with the chairs facing each other. The listening activity requires about 3040 minutes to complete and may be used at the secondary level as well as subsequent levels of instruction.

To introduce the activity, the instructor has the participants count off in twos. The No. Is are instructed to go with the co-facilitator into the hall while the No. 2s remain in the room.

To explain the activity, the instructor shares the full instructions. The No. Is are instructed to share with their partners the answers to "What is your favorite hobby and why?" Once the No. Is have finished speaking, the No. 2s will summarize what was said. The No. Is are instructed to return to the room and find an empty chair and sit next to a student already sitting down. Then No. Is are to begin telling the No. 2s what their favorite hobby is and why. No. 2s are instructed to not listen to their partners for the first half of the exercise. They are to show no eye contact; they are to fidget and lean back in their chairs; they are to clearly not listen to what the No. Is are saying. Half way through the activity, the instructor gives a signal such as a knock on the desk or adjusting the lighting in the room to the No. 2s, who then start to listen intently. They need to express interest in what No. Is are saying by learning forward, giving eye contact, and nodding their heads. No. 2s can also use paralanguage such as "uh nuns" to show they are listening. The No. 2s are instructed to summarize what the No. Is said.

To practice the activity, the instructor and cofacilitator have students sit in pairs and have the No. Is begin talking. After 30 seconds, the instructor gives a signal to the No. 2s to change their listening nonverbal communication.

To reinforce the activity, the instructor calls time and asks the speakers and listeners to line their chairs into two rows facing each other- speakers on one side and listeners on the other side. The debriefing phase begins here. The listeners are asked the following questions:

1. "How did you feel about the activity" during the beginning, middle, and ending stages?

2. "What have you learned from the activity?" (Experiential Learning Games, 2011, para. 18).

The No. 2s will respond with feelings they experienced during the activity. During this part of the debriefing session, the instructor should not let the No. Is respond until the No. 2s have had the opportunity to do so. Then, the instructor repeats the questions to the No. Is and has the No. 2s be silent and listen.

Suggested discussion should include, first, that not everything that everyone says is earth-shattering; still, it is important to the speakers and needs to be listened to. Next, it is insensitive for a speaker to go ahead and talk even if the listener is ignoring the speaker. Further, "Not listening (either to the verbal message or the non-verbal message) is the malaise that has affected society. This malaise has resulted in competing relationships rather than in collaborative synergistic relationships" (Experiential Learning Games, 2011, para. 25).

The listening activity can conclude with the instructor asking the participants how they will listen the next time someone wants to talk with them. What positive nonverbal actions will the listeners do so that the speakers know they are being listened to? The instructor can encourage the students to improve their listening skills.

G5) "What's on a penny?" activity

The purpose of this activity is to help students see the value of detail oriented skills and effective teamwork. The materials needed include pennies, paper, pen or pencils, and prizes. This activity requires about 810 minutes to complete and may be used at the secondary level as well as subsequent levels of instruction.

To introduce the "What's on a penny?" activity, the instructor passes out a penny, a paper, and a pen or pencil to each participant.

To explain the activity, the instructor asks each participant to list all of the distinguishable characteristics that he or she sees on the penny. This should be timed for 1-2 minutes. At the conclusion of the time, the instructor puts students into groups of three to five and instructs the members of the groups to combine their lists. This should be timed for 1-2 minutes.

To practice this activity, the instructor gives the participants the "Go" to begin writing their lists of distinguishable characteristics. At the end of the time, the instructor says, "Stop, now get into your groups and share your lists." The instructor calls time a second time. At the conclusion of this step, the instructor shows a graphic of both sides of a penny or produces a list of the characteristics. The instructor then identifies each item and has the participants raise their hands as the characteristics are identified. The groups sum their scores by awarding one point for each correctly identified characteristic and report their results to the instructor. The instructor gives the group with the most items listed an "award" or a "prize."

To reinforce the activity, the instructor may ask the following questions:

1. What did you see on the penny?
2. What did you not see on the penny?
3. Did your group help you see more of the characteristics of the penny?
4. Why do you think you missed what you did on the penny?

Following the debriefing, the instructor leads a discussion about applying what the participants learned by asking the following questions suggested by Dortch:

1. How can individuals see something as common as a penny almost daily and yet not "see" its characteristics?
2. How can we increase our individual attention to important details?

3. How can we increase our individual attention to the people we work with?
4. What does this tell you about the value of team efforts?

G6) The line-dancing activity

The purpose of the linedancing activity is to develop listening and interpretation skills, leadership and followership skills, and communication skills. The materials required for this activity include a room with adequate space for dancing and an audio device for playing line dancing music. The line-dancing activity requires about 20 to 30 minutes to complete.

To introduce the line-dancing activity, the instructor asks the students if they know how to line dance. Since many don't know how, the instructor responds, "Great. Now I will have a chance to show you how."

To explain the line-dancing activity, the instructor will describe and model the simple dance steps in a modular fashion without the music.

To practice the line-dancing activity, the instructor continues to model each step while the students follow along. When most of the students have the basic steps down, they begin practicing with the recorded music. To ensure a smooth transition to the recorded music, it is advisable to select a slow song for the first line dance experience.

To reinforce the line-dancing activity, the instructor provides group and individualized feedback and assistance as needed until all students can perform the steps correctly. Proficient students can be used as tutors for less proficient students, modeling steps and providing oral feedback and encouragement as needed just as the instructor does. When all students can perform the steps correctly, the instructor can either add additional steps to the dance routine or select a faster song for the dance routine, which introduces transferability of learning. Finally, the instructor can lead a debriefing activity. Questions such as, "What might have made you learn faster?" and "Would watching a YouTube video or DVD of this dance have been helpful?" could be asked of students. Another good question is, "If performing the line dance were on the final, would you be able to perform the steps perfectly? Why or why not? How would

additional practice influence your ability to perform the line dance at the end of the semester? Why?"

G7) The story-in-the-bag activity

The purpose of the story-in-the-bag activity is to develop student presentation confidence. The materials needed for the activity are small gift bags filled with various items. The items should be varied; for example, avoid using all office supplies. Further, items should exclude those with sharp edges and points. The activity takes approximately 25 minutes and may be used at the secondary level as well as subsequent levels of instruction.

To explain the story-in-the-bag activity, the instructor models telling a story by holding up individually each of the five items contained in the bag, using it as a prop, when telling a story based on the five items. The instructor distributes bags of items to student teams of five. Teams could be formed based on writing teams that will be presenting later in the term; such a formation helps to solidifv arouD cohesiveness.

To practice the story-in-the-bag activity, student teams are given approximately 10 to 15 minutes to devise a story, which they will then present in front of the class. Each team member is responsible for holding up a prop when telling the related aspect of the story as a group in front of the class.

To reinforce the story-in-the-bag activity, the instructor provides positive comments about the group stories. These comments may be about content or delivery.

APPENDIX VII:

Examples from the Solutions of Practical Exercises

Below are the examples from the works of students who have considerably improved their evaluation in post-test. A Student 3 with an increase of 87% in the mean of post-test has received the following evaluation:

Evaluation of the Practical Exercises of the Student 3

Indicators	Understanding of business innovation	Understanding of the innovation process	Creativeness of a solution proposed	Innovativeness of management techniques proposed	Awareness of personal soft-skills	Overall level of assignment elaboration	Overall level of adequacy of answers
Pre-test	1	3	4	2	1	2	2
Post-test	3	2	5	4	5	4	5

It is observed that the main improvement comes from the indicator "awareness of personal soft-skills". The students provided the following answers in pre-test and post-test:

- **(Pre-test)** As innovation manager of Lego, what skills you think you would need to have to be successful? Which of these skills you currently have? Which of these skills you don't have and hope to improve?
- *I consider myself as reliable, hardworking young person but my weakness is that I don't like technology a lot and it started to be one of the most important things nowadays.*

- **(Post-test)** As innovation manager of Nintendo, what skills you think you would need to have to be successful? Which of these skills you currently have? Which of these skills you don't have and hope to improve?
- *As innovation manager I have to have ideas, I have to be open minded and very positive person so everyone will want to work with me and sharing ideas with me. I see myself as a confident person and I believe that my ideas, opinion and decisions are going into right way. As well, based on the group project that we had for innovation management I*

have to say that I recognized that my group was following my ideas and my criteria. The thing that I have to improve still is to control myself because when I am working hard, I want everyone to work hard and if someone is "skipping" it I say it directly to face so maybe I should be a bit more diplomatic in that sense.

In the pre-test answer, the student is only aware of being a hard-working person; however, she does not explain what other skills she thinks she has which are important to be a successful innovation manager. In the post-test answer, the student states the importance of creativity *"I have to have ideas"*, teamwork and interpersonal skills "*I have to be open minded and very positive person so everyone will want to work with me"*. The student also demonstrates self-confidence and the ability to be a leader; this awareness came as a result of the course and specifically, as the student emphasizes, from working on a team-project "*I have to say that I recognized that my group was following my ideas and my criteria."*

A Student 5 with an increase of 53% in the mean of post-test has received the following evaluation:

Evaluation of the Practical Exercises of the Student 5

Indicators	Understanding of business innovation	Understanding of the innovation process	Creativeness of a solution proposed	Innovativeness of management techniques proposed	Awareness of personal soft-skills	Overall level of assignment elaboration	Overall level of adequacy of answers
Pre-test	2	2	1	4	2	3	3
Post-test	4	4	3	4	3	4	4

It is observed that the main improvement comes almost equally from all indicators. The student provided the following answers in pre-test and post-test:

- **(Pre-test)** Which kind of innovation do you find in this case study? Please identify process, products or services (understanding of business innovation).
- *An important object in innovative strategy of Lego is to know that when innovation comes out of control and ceases to comply with overall*

strategy of a company between business and creativity has appeared a crack, which lead to inevitable loses. What had already happened with Lego company and not once. I think that idea with well-known movies or cartoons is excellent even if for a short period, it is what kids are waiting for and it is right to continue developing in that sector with real expectations, as a key point of marketing has to be focused on what customers like so much and is that buying a new Lego set you can add it to previous one and items will be fitted.

- **(Post-test)** Which kind of innovation do you find in this case study? Please identify process, products or services (understanding of business innovation).
- *Nintendo is a video game company and it is the whole era. It is unlikely in the future someone will manage to reach the same position, what was possible to take with Nintendo throughout the period since the end of the 80th to the middle of the 90th years in the industry. On 8-bit projects of the company the generation of players grew, and even the uninitiated understood value of the phrase "to play on Nintendo". Exclusive business intuition of the management became the reason of prompt take-off of the company and also Nintendo was able to keep the position in the market thanks to introduction and further completion of numerous innovations, which are used in games still. For example, Nintendo made small revolution in saving process, having let out The Legend of Zelda in which it was possible to write down preservations on the cartridge. Moreover, different companies offered a set of various ideas of how to expand Game Boy scope. And the most inventive use of the portable device was offered by Nintendo. Game Boy Camera which is let out in 1998 was inserted into the port for cartridges and allowed users to do pictures (black-and-white), to edit them, to send to the press, and also to play various mini-games. Today cameras on pocket consoles and smartphones became part of habitual functionality of such devices.*

In pre-test the student does not identify what type of innovation she sees in the case-study nor she explains what Lego innovations were; In post-test the student

demonstrates a clear understanding of what business innovation is and provides examples from the range of company innovations, however, she does not state clearly what type of innovation she identifies in this case study.

- **(Pre-test)** As innovation manager of Lego, what skills you think you would need to have to be successful? Which of these skills you currently have? Which of these skills you don't have and hope to improve? (awareness of personal soft-skills)
- *Personally for me, it is essential to be more open to external ideas and technological decisions, and not to be afraid to experiment with them. In addition, an important quality is an obsession of innovations, a passionate desire to engage with them, have an aspiration to divide your enthusiasm with the staff and project teams.*
- **(Post-test)** As innovation manager of Nintendo, what skills you think you would need to have to be successful? Which of these skills you currently have? Which of these skills you don't have and hope to improve? (awareness of personal soft-skills)
- *As an innovation manager you must be equipped with both business and technical know-how since you will be working together with colleagues from many different areas of the company and will also need to be familiar with their tasks, as an innovation manager, you should lead interdepartmental, cross-hierarchical and cross-company projects and teams and to display leadership qualities, and for sure, important to improve ones soft-skills. Moreover, as an innovation manager it is also important to be extremely enthusiastic about new ideas, be inquisitive, flexible, motivated and committed. A person must be charming enough to market thoughts and ideas. And one characteristic is key: courage. Because if you are courageous enough to think outside the box, to overcome obstacles and to tread new paths, you will make a successful innovation manager, and this unfortunately I do not have, I am not courageous enough, but maybe it can come with experience.*

In pre-test, the student is right to say that for innovation it is important to be open-minded, not to be afraid of risk and collaborate with teams, however, she does not state which of these qualities she has or does not have. In post-test, the student is more aware of the skills needed for innovation: she mentions team-building, know-how, leadership, and soft-skills, creativity and courage. The student does not say whether she has all these qualities, however, she recognizes her weakness of not being courageous enough.

A Student 11 with an increase of 50% in the mean of post-test has received the following evaluation:

Evaluation of the Practical Exercises of the Student 11

Indicators	Understanding of business innovation	Understanding of the innovation process	Creativeness of a solution proposed	Innovativeness of management techniques proposed	Awareness of personal soft-skills	Overall level of assignment elaboration	Overall level of adequacy of answers
Pre-test	3	2	1	2	4	3	3
Post-test	4	3	3	4	5	4	4

Some of the answers the student has provided are below:

- **(Pre-test)** Which innovative ides do you have for development of the company? (Creativeness of a solution proposed).
- *In order to achieve company's goals, Lego should continue to pay attention on the relationships with customers. It is important to focus on the participation of customer to design process of company. Customers may interact through designing their own ideas and presenting them to Lego.*
- **(Post-test)** Which innovative ides do you have for development of the company? (Creativeness of a solution proposed).
- *In order to continue to be innovative, Nintendo should follow the current tendency - to grow interest of mobile games and social network. Games as Zelda and Maria can be transformed to the mobile and social games to catch the next generation of fans. In order to protect its brand and*

content in a smart way, Nintendo misses an opportunity to take its characters to mobile device and social world.