Developing Entrepreneurial Mindset in University Undergraduates

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Abstract

Aim. The aim of the research is to discuss how to design entrepreneurial mindsets in undergraduate students within the academic culture of a classical university.

Methods. In order to become aware of the international perspective regarding entrepreneurship education, global innovation index, entrepreneurship education delivery models, global forums and entrepreneurship community platforms as well as the entrepreneurship barometer were taken into consideration.

Results. A survey regarding the appropriateness of entrepreneurship education at IFNUL has been conducted. In total, 125 bachelor's (55.2%) and master's degree (44,8%) students from different Departments of IFNUL completed the questionnaire based on the Entrepreneurship Barometer. Thus, the average rating (1 (low) – 5 (high)) of the likelihood that students will ever run their own business is 3.67. Based on the obtained results, the course in Entrepreneurship and Innovation has been elaborated as a part of the curriculum for students of the Department of Pedagogical Education at IFNUL.

Conclusions. Findings of this paper suggest that, in general, universities should promote entrepreneurship as a career option and provide entrepreneurship experiences to undergraduate and Master's degree students. The change in the academic culture is a common challenge, which includes the introduction of entrepreneurial thinking and acting as alternatives to traditional teaching approaches and opening up the universities to the surrounding society and industrial ecosystem. The use of ICT and in particular eLearning in delivering entrepreneurial education might be an additional option for expanding the outreach of the course.

Key words: entrepreneurial mindset, entrepreneurial learning, entrepreneurship program, entrepreneurship and innovation, undergraduate students.

Introduction

Today entrepreneurship is becoming an increasingly attractive employment option not only for experienced and highly skilled professionals but also for university graduates. According to the recent research and statistics, universities all over the world make great efforts to develop students' entrepreneurial skills (Kirby, Guerrero, & Urbano, 2011) both through formal academic programs as well as through extracurricular activities, aiming first of all to foster entrepreneurial mindsets (Hathaway, Bell-Masterson, & Stangler, 2013). Everyone at some stage may need to become an entrepreneur, or to display entrepreneurial behaviour. The objectives of education should therefore nurture young people's personal qualities that form the basis of entrepreneurship, such as leadership, creativity, marketing/sales, negotiation, administration, time management, self-motivation, financial management and a range of interpersonal skills (Frank, 2005) as well as spirit of initiative, responsibility, independence, and capacity for confronting risks. In fact, entrepreneurship can be viewed – depending on the level of education – as a cross-curricular and horizontal aspect, or as a teaching methodology, besides being treated as a specific subject.

According to a systematic literature review presented by the National Council for Graduate Entrepreneurship (Pittaway, & Cope, 2006) entrepreneurship education has a significant impact on student motivation, propensity and intentionality. "It is now recognised that the benefits of entrepreneurship education are not limited to the creation of new business ventures and subsequent new jobs but will develop key competencies of students, develop their mindsets and in turn enable them to be more creative and self-confident in whatever they undertake" (*Entrepreneurship Education in Ireland: Towards Creating the Entrepreneurial Graduate*, 2009).

Integration of entrepreneurial courses in engineering, the humanities, science and educational faculty programmes at universities aimed at developing entrepreneurial mindsets is viewed as a timely and relevant, yet understudied, phenomenon of student entrepreneurship (Fini, Meoli, Sobrero, Ghiselli, & Ferrante, 2016) as universities need to develop a certain way of thinking and behaviour in graduates. Besides, great attention is paid to the appropriateness of different types of entrepreneurial education and the choice of pedagogical approaches (Ojastu, Chiu, & Olsen, 2011).

So, entrepreneurship is considered to be the driving force for economic growth as it contributes to the creation of new jobs and businesses, to self-employment through the development of new capabilities and skills. As a result, it makes economies more competitive and innovative, which is a very topical and urgent issue for Ukraine today.

Methodology

From a methodological perspective, we focus on the level of the programme context by analysing the direct inputs into the launch of entrepreneurship education at Ivan Franko National University of Lviv (IFNUL).

In order to become aware of the international perspective regarding entrepreneurship education, a larger study has been conducted where we took into consideration global innovation index, entrepreneurship education delivery models, global forums and entrepreneurship community platforms and the entrepreneurship barometer.

In order to define and implement the Strategy for Entrepreneurship Education at IFNUL, the following steps have been conducted (Savula, Kukharskyy, Katernyak, Loboda, 2014):

- identification of local and international best practice;
- conducted entrepreneurship courses in close collaboration with industrial partners;
- evaluation of the course;
- offered entrepreneurship internship at innovative companies to students;
- workshop with innovation expert sharing experiences.

In summary, a wide range of activities have been conducted in order to identify good examples, conduct actual entrepreneurship education, adapt experiences and knowledge to the local business climate.

Background

In Ukraine, introducing entrepreneurial education at classical universities is quite new. In the academic field Ukraine has a well-developed education and research structure in most of the traditional disciplines and sciences as natural science, liberal arts, education, computer and engineering science etc. But in business, entrepreneurship, innovation and design there are few, and those who work in these fields are mostly private universities and institutes. The challenge is to introduce entrepreneurial thinking and acting as alternatives to traditional employment in state owned companies and public organizations and to open up the universities to the surrounding society and industrial eco-system (Ekman, & Ekman, 2009).

Education and research at IFNUL are structured around traditional subjects with a strong focus on natural science and basic engineering, where Ukraine has reached a high level in an international comparison. A shift from the culture of research that "can be applied" to "should be applied" requires the development of an entrepreneurial mind-set in the academic community. Research is still not so often closely linked to cooperation with entrepreneurs, private investors and companies. A challenge is, besides entrepreneurial thinking, to open up the universities to the surrounding society and develop

an entrepreneurship eco-system. Benefits of entrepreneurship education are measured not only by the number of newly created ventures and jobs but also by the entrepreneurial capacity among students, which is the basis for national well-being and prosperity, and competitiveness of the region.

At IFNUL, first attempts to introduce entrepreneurial education were made back in 2012 when Education for Entrepreneurship and Innovation Projects started in collaboration with Stockholm University, Sweden, started and ran for two years aiming to stimulate and improve entrepreneurship at the university and to act later on as a model for other universities interested in developing entrepreneurial mindsets in their students. The project addressed the gap – lack of entrepreneurship and innovation in higher education, and covering that gap might support and prepare future entrepreneurs with the skills they need in order to increase their chances of success. In addition, students who did not wish to pursue a career as entrepreneurs could get a better understanding what it really is, which was also an advantage as most professional people come into contact with entrepreneurial initiatives at a certain point during their professional life.

As a result of that project, more than 100 students from various departments of IFNUL took a course in Entrepreneurship and Innovation as a part of their curriculum, 14 students concluded an international entrepreneurship internship, 6 companies were started, and several more were in starting-up phase, an innovative small and medium enterprise (SME)-ecosystem was created at the university level around the new course, as well as a network of engaged researchers, teachers and entrepreneurs was established.

At the end of the project, IFNUL developed a strategy to further develop entrepreneurship in higher education. The strategy builds on a 7-step common core, including the following steps:

- Step 1 Shared understanding of the need for Entrepreneurship
- Step 2 Find and activate champions
- Step 3 Formulate a basic entrepreneurship course
- Step 4 Activate and engage local business community
- Step 5 Expand via more courses and more advanced courses
- Step 6 Engage in entrepreneurship research activities
- Step 7 Build innovation institutions such as incubators / accelerators (for example, IdeaLab was launched at IFNUL)

Today the course in Entrepreneurship and Innovation is implemented as a mandatory element of the curriculum at some departments of the University (e.g., for undergraduate and post-graduate students at the Department of Electronics and Computer Technologies) and as an optional course at the Department of Pedagogical Education (for Master's degree students).

Entrepreneurship at Ivan Franko National University of Lviv

In the academic field Ukraine has a well-developed education and research structure in most of the traditional disciplines and sciences as natural science, liberal arts, computer and engineering science etc. The universities in Ukraine are large with a long and interesting history. Founded in 1661, IFNUL is one of the oldest and most respected universities in Eastern Europe. It is annually included into the 5 top Ukrainian University ranking. The courses and the research are structured in traditional subjects with a strong focus on natural science and basic engineering, where Ukraine has reached a high level in an international comparison. Business and entrepreneurial mindsets have not been developed at the state universities. The challenge is to introduce entrepreneurial thinking and acting as alternatives to traditional employment in state owned companies and public organizations and to open up the universities to the surrounding society and industrial eco-system. Research is not so often closely linked to cooperation with entrepreneurs, private investors and companies. But a lot of initiatives have been started to change this, for example in Lviv in IT-BPO (Information Technology and Business Process Outsourcing) in cooperation between Lviv City council, universities and IT companies. Since 2005, IFNUL together with the Ukrainian Distance Learning System have initiated and supported an annual event – Innovation Spring, which includes: a series of workshops "From Idea to Marketplace", Idea Competition – "Idea Marathon", and final Innovation Spring Forum where students and young researchers present their business concepts to business and research community.

In 2007-2010,the Ukrainian Distance Learning System administrated the Laboratory of Ideas located in the main building of IFNUL, and the course "Creativity Tools and Innovation" was conducted as an interdisciplinary optional curriculum, which attracts at least 30 students annually.

The mission of the Laboratory of Ideas was to become an open space where students are able to cooperate and develop their entrepreneurial mindset, try to think differently, obtain practical tools for idea generation, to encourage diversity, and to get support for idea development into a business concept. Today the Laboratory of Ideas is institutionalised in the infrastructure of IFNUL.

In March 2010, IFNUL adopted the University Development Program: "Ivan Franko National University of Lviv – Advanced European University" focused on forming cross-disciplinary groups and programs for promoting leadership, and launching new curricula that respond to the labour market needs.

Survey on entrepreneurship education

Prior to introducing the course in Entrepreneurship and Innovation in the university curriculum, a series of studies were conducted. We conducted

a survey regarding the appropriateness of entrepreneurship education at Ivan Franko National University of Lviv (IFNUL). The survey aimed to capture the students' perspectives, and 125 students were involved in the survey. They filled in the questionnaire and were interviewed in order to assess their entrepreneurial intent, creativity and attitudes as well as the entrepreneurship perceived feasibility, perceived desirability and propensity to act, among others.

The survey aimed to:

- assess the needs for entrepreneurship education from the bachelor/ master's students' perspectives.
- assess the effectiveness of support infrastructures within the universities in facilitating the entrepreneurship education (enterprising approach in education).
- development and understanding of the culture within the participating universities and their impact on entrepreneurship education.

The summary findings contained in this paper can be considered representative. In total, 125 bachelor's (55.2%) and master's degree (44,8%) students from different Departments of IFNUL completed the questionnaire based on the Entrepreneurship Barometer (Frank, 2005). Thus, the average rating (1 (low) – 5 (high)) of the likelihood that students will ever run their own business is 3.67.

Then students were asked to rank a number of attitudinal statements (from 1 (lowest) - to 5 (highest), where 5 is most significant). The ranked preferences, from the statements with highest average rates to the lowest, are as follows:

- I prefer a steady income stream 4.38
- I want to be my own boss 3.90
- I continually come up with new ideas 3.50
- I like to take risks 3.26
- I prefer to follow others lead 2.65

The student sample indicated a stronger preference for a steady income stream, with their secondary preference being the desire to be their own boss.

In order to assess students' perceived feasibility and desirability of their entrepreneurial intention and propensity to act as well as their creativity is problem solving, the following matrix of students' Entrepreneurial Intention and Creativity was formed, based on the answers given by the sample of students in the questionnaire, and by analysing those who evaluated the likelihood of their business creation as very high (5) – to neutral (3). The results are presented in Table 1:

Table 1. Entrepreneurial Intention & Creativity Matrix

Entrepreneurial intention (5-point scale: 1 totally disagree – 5 totally agree)	
1. The likelihood that I will ever run my own business is very high	3.67
2. The likelihood that I will ever run my own business is very high (=&>3 points)	4.01
Perceived feasibility	
1. I think it would be very cool to start my own business	4.37
2. I would love to start my own business	4.10
3. If I would start my own business, I would be constantly afraid to lose all my money	2.77
Perceived desirability	
1. I know what it takes to start a business	3.01
2. I feel sure enough of myself to start my own business at some point in the future	3.73
3. If I would start my own business, it would certainly be a success	3.80
4. It looks very hard to me to start your own business	3.29
5. If I would start my own business, I would definitely be overworked	4.09
Propensity to act	
1. I'd rather make my own mistakes than listen to someone else's orders.	3.44
2. I would rather someone else take over the leadership role when I'm involved in a group project	2.62
3. I like to get a good idea of what a job is all about before I begin	4.46
4. I'd rather not have too much responsibility	2.70
5. I enjoy making my own decisions	4.27
6. I consider myself to be generally more capable of handling situations than others	3.67
7. When I see a problem, I prefer to do something about it rather than sit by and let it continue	4.26
8. Others usually know what is best for me	2.10
9. I like to wait and see if someone else is going to solve a problem so that I don't have to be bothered with it	2.37
Creativity (5-point scale: totally disagree – totally agree): "Problem solving"	
1. I can often see better ways of doing routine tasks	3.77
2. I am good at combining ideas in ways that others have not tried	3.59
3. I am not very original in my ideas thoughts and actions	2.41
4. I am never able to think up answers to problems that haven't already been figured out	2.20

In assessing the external influences on Students' Entrepreneurial Interest, we analysed the data only of those students who were quite interested in starting their own business at some point in the future (those who rated the likelihood that they would ever run their own business as very high (5) – to neutral (3)). The percentage indicated on the pie-chart (Fig. 1) (calculated total as 100% of all sectors) demonstrates the % of students who chose the specific factor.

University students are predominantly influenced by high profit entrepreneurs (66%).

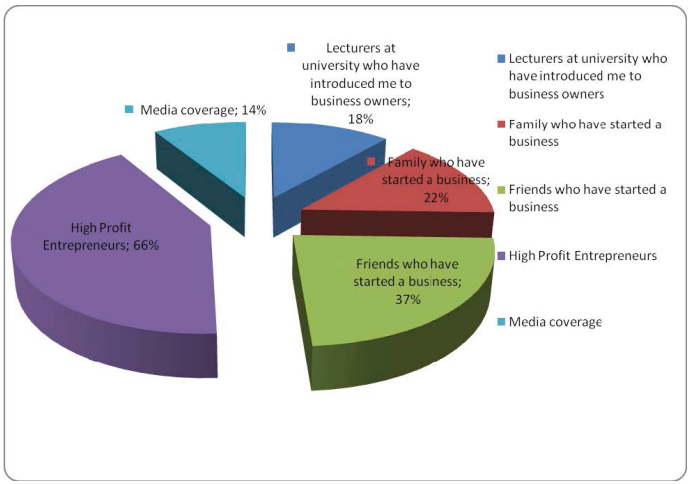

Fig. 1. External influences on Students' Entrepreneurial Interest

The respondents were then asked to identify their inner motivations, for wanting to start their own business in the future. In order to identify the range of motivating factors at interplay, respondents were not asked to rank their responses but could freely identify as many motivational factors as applied. The following bar chart highlights responses from the sample of those students who were quite interested in starting their own business at some point the future (those who rated the likelihood that they would ever run their own business as very high (5) – to neutral (3)).

For all surveyed students, the desire to achieve success and realise oneself prevails or is second most significant motive (for 59,6% students of IFNUL), while desire to obtain wealth takes one of the last places in the students' motivation hierarchy, as presented in Table 2.

Students were asked to rank in order the characteristics they considered most important for an entrepreneur to possess. For students at IFNUL, top-priority characteristics of an entrepreneur included: hard working/energetic, creative/innovative, determined, a good communicator with a network, and responsible.

Table 2. Inner Motivation of Students' Entrepreneurial Interest

Be my own boss	44,2%
Independence from employer	38,5%
To obtain wealth	10,6%
Desire to achieve success and realise oneself	**59,6%**
Passion with own idea and willingness to implement it	20,2%
Identification of a new business opportunity	8,7%
Desire to innovate technologically	29,8%
To contribute to job creation	16,3%
Flexibility of working hours	27,9%

Students were asked if they thought entrepreneurship/enterprise development education should be an important element (mandatory or optional) of their curriculum. Overall more than 90% of the surveyed students considered that entrepreneurship education should be incorporated within their programme of study.

Students who took part in the questionnaire were then asked to identify the *skills* and *knowledge* areas they considered important to be included in an entrepreneurship education programme. The key skills and areas identified were, in rank order:

- Risk assessment and Opportunity identification
- Developing a business plan
- Creativity tools and Innovation
- Selling an idea and finding customers
- Human Resource Management
- Soft skills (leadership) and personal development

The skills and knowledge valued least by all surveyed students were:

- Accounting
- Financial models and venture capital
- Regulatory requirements for starting a new business
- Intellectual property management

The survey also sought to assess students' awareness of current *networking* types of support and *initiatives* available at the University for students interested in entrepreneurship. The responses to the question "*Does your university do enough to create awareness of entrepreneurship as a potential career option?*" reflected a very low level (12.2%) of awareness of such initiatives and supports.

Students were then asked if, in their opinion, the University was sufficiently engaged in raising students' awareness of entrepreneurship as a potential career option. The majority of students (68.6%) did not think their University sufficiently promoted entrepreneurship as a career option.

These findings suggest that, in general, the universities should promote entrepreneurship as a career option and provide entrepreneurship experiences to students, if the goal of creating the entrepreneurial graduate is to be achieved.

It was interesting to analyse how bachelor's and master's degree students saw their future career after graduation. 51% of the surveyed students think they are going to work within an existing company or organisation, and only 23.6% are thinking about starting their own business or working for themselves.

Finally, respondents were asked to outline the main methods and approaches employed by their University in delivering entrepreneurship education, by rating how often the given methods are used: from never - to often; and the results are demonstrated in Figure 2 below:

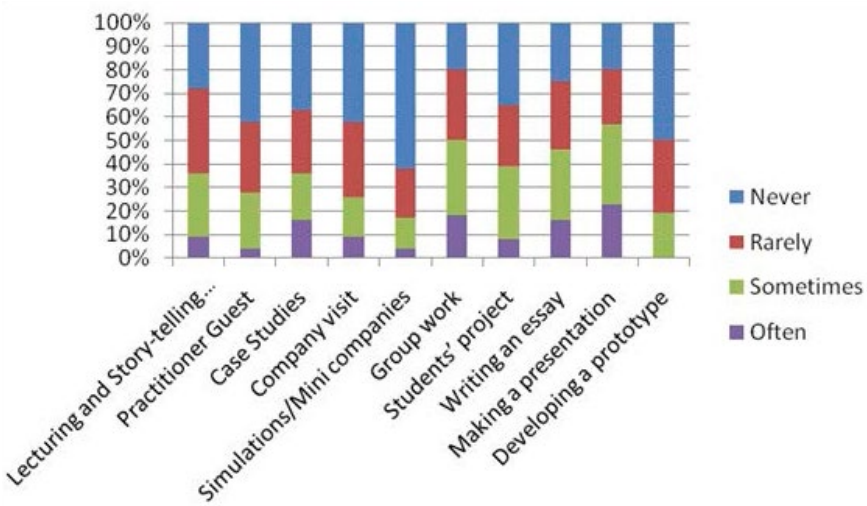

Fig. 2. Methods and approaches used in classes at IFNUL

The analysed questionnaire results show that the dominant methods were students' group work and presentations, while company visits, simulations/ mini companies and developing a prototype were hardly ever used in classes at the University.

Surprisingly, quite a lot the surveyed students (58.1%) answered positively to the question "Do you have an idea, which you would like to realise during your time at the University?"

In terms of support, which the surveyed students would like to get from the University for their idea development in business, they mentioned, first of all education, internship in a company and business consulting.

To draw a conclusion from the survey findings, it can be stated that the surveyed university students demonstrated their interest in the course "Entrepreneurship and Innovation", which is proved by expression by them at a high rate (4 out of 5) of interest in starting their own business at some point in the future. Generally, those students reported that their entrepreneurial interest was most influenced by family members and friends who had started a business (78%), followed by high-profile entrepreneurs (58%). The study also found that, on average, 66% of all surveyed students were interested in developing their idea while studying at the university (through the university infrastructure).

Despite that, there was a reported lack of students who could actually start-up within the university incubators. This is due to such factors as a lack of existing entrepreneurial support entities and policies; a lack of coordination of complementary entrepreneurship and in-company internship support activities; and a lack of education and training for and about entrepreneurship. The ability to develop a business plan, risk assessment and opportunity identification are considered by students to be one of the most important skills and knowledge acquired within entrepreneurship education. And today growing evidence suggests that successful entrepreneurs depend more on their soft skills and personal development as well as on their ability to be able to adjust flexibly to the marketplace and less on formal business planning.

Conducting the course in Entrepreneurship and Innovation

The course in Entrepreneurship and Innovation is a part of the curriculum and it is offered as an optional discipline for students of the Department of Pedagogical Education at IFNUL. It comprises the following main topics:

1. Entrepreneurship - both in business and in social fields. What a start-up consists of. What students can expect and have to take into account in their planning

2. Creativity and Idea Generation as sources for innovation.
3. NABC Model. Requirements for starting a new business. Entrepreneurial witness. Pitching
4. Bootstrap finance. Business angel. Pitch training I
5. Sales. Sales in practice. Pitch training II
6. Users vs. Customers; Defining a business model. Business Plan Template
7. Venture capital. VC. Pitch training III
8. Technology Transfer through Joint Venture and Licensing
9. Competences. I want to start a business, what do I do?
10. Innovation in the academic and business dimension. Creativity Tools and Idea Generation for Team Work

The course also includes teamwork, consultations, and a pitch contest: pitch presentations made by students' teams. All lectures are divided into three parts: i) theoretical, ii) practical (entrepreneur guest sharing experience), iii) student pitching & presenting. In this way, each lecture combines a combination of theory, real-life cases and stories as inspiration and finally a practical part where students share their ideas and pitch start-ups.

In addition, students form teams for carrying out project assignments. The assignment is to identify and start-up a business (a simulation one). This means that students identify an idea, relate this idea to the market, describe the idea from a business perspective, and share/ pitch idea in front of potential investors. Each group also produces a complete business plan.

In order to involve a critical mass of the students and to provide necessary conditions for their socialisation, from the viewpoint of the success of the experiment, (1) we have used our pedagogical model of virtual socialisation '4A' (Attention, Attraction, Actualisation, and Action) aimed at effective knowledge management through actualisation of learners' needs and enhancement of their motivation (Loboda, 2016).

In order to make facilitation of the learning process successful, we applied certain techniques to stimulate and maintain learners' interest for active participation by means of:

- self-tests that help understand students' attitude towards entrepreneurship, creativity, leadership (e.g., self-test "How creative are you?", "Leader"), and quizzes as tools for actualisation of the need for additional knowledge and skills;
- creation of the situations of success – when every learner experiences positive emotions after successful performance of a complex task, which strengthens self-reliance, assurance of one's own capacity;

- creation of the situations that provoke change – when a learner generates and advocates ideas, demonstrates leadership qualities in joint decisions, for example, on key similarities and differences between entrepreneurship and innovation, on assessing new ideas, discussing environmental factors that influence entrepreneurship, corporate climate etc.;
- team assignments, for example, writing team reports on a company visit in terms of innovation - when students study company's vision, products/ services, organisation, leadership/management and strategy with a focus on innovation.

Our task is to organise students' work in such a way that everyone is involved in the process of creativity and is responsible for finding possible solutions.

Evaluating the results of the course in Entrepreneurship and Innovation

After the course in Entrepreneurship and Innovation was conducted for the first time, the experiences from the course were evaluated. All participants were in agreement that the course was very informative, focused on practical issues, and exciting.

According to the feedback received from 20 students who took part in the course, it was a unique hands-on experience for them; now their motivation to implement the idea is very strong. Topics were relevant to the needs of students of non-business department who are willing to start-up, particularly basic knowledge in entrepreneurship, pitch and self-presentation skills, elements of a business plan, approaches to analyse one's idea, crowd-funding etc. The course is based on very good textbooks, includes real-life examples and exciting well-structured lectures. It helps expand worldview and develop entrepreneurial mindset. Pitching and general presentation skills are essential for students; while writing a Business plan appeared to be a complicated task to some of them.

In terms of possible improvements, students mentioned: creating a bank of good examples/ best practice (videos, messages from entrepreneurs); adding topics on Creativity Tools, Technology Transfer, Business Models, Presentation Skills, teaching story-telling of one's idea, giving better understanding of the market and how to expand it; and explaining the Power of Questions methods (how to prepare the audience). Written feedback should be given on students' pitch presentations, so that they do not repeat their mistakes (e.g., record them and then analyse together). For every part of a business plan, students should describe how they test their idea. More group assignments should be added, while collaboration in the group should be evaluated.

In students' opinions, the most important thing to do/learn if you want to become a successful entrepreneur in Ukraine is to believe in one's own abilities, not to be afraid of possible risks too much (perceive failures as experience), to have positive perception of entrepreneurship in general, and not to revolve around one idea, to look for other options and way-out.

It was noted that young people in Ukraine have no confidence in their own abilities to start a business and to find bootstrap finance, they are often afraid of taking risks and making the first step, which is the main thing for entrepreneurship. A key lesson taken by the students can be formulated as follows: *"There is nothing impossible"* and *"Doing business is simple"*. So it is essential to make clear that entrepreneurship is a change, because through entrepreneurship innovations come into the society, and entrepreneurship assists in creating jobs.

However, as with all novelties, there are a number of issues that may be enhanced, namely:

- the size of students' project teams should not exceed 5 persons,
- there is a need for additional training of supporting staff,
- there is a need for a common platform where online lectures, course materials, entrepreneurial witness video-bank, pitches etc. could be easily uploaded and distributed to increase the outreach,
- there is a need for increased knowledge/ research regarding the emerging entrepreneurship and innovation eco-system at the level of the University, and on how it may be facilitated, supported and enhanced.

Educators also need to develop and strengthen the conceptual links to self-employment and entrepreneurship more fully or make them explicit in their teaching.

Conclusions

As a result of the analysis and the survey conducted, we can set forth several desired outcomes of the course in Innovation and Entrepreneurship:

1. Students being motivated towards an entrepreneurial career: i.e., they can:

- understand the benefits,
- can compare with an employee career,
- have some "heroes" as friends, family members, acquaintances,
- have images of entrepreneurial people "just like them".

2. Entrepreneurial behaviour, attitudes and skills developed, such as:

- opportunity seeking,
- initiative taking,
- ownership of the development,
- commitment to see things through,

- personal focus of control (autonomy),
- intuitive decision making with limited information,
- networking capacity,
- strategic thinking,
- negotiation skills and capacity,
- selling/persuasive capacity,
- achievement orientation,
- calculated risk-taking.

3. Generic entrepreneurship competencies developed, including:
- how to find an idea,
- how to appraise an idea,
- how to see problems as opportunities,
- to identify the key people to be influenced in any development,
- know how to learn from relationships,
- know how to assess business development needs,
- know where to look for answers,
- emotional self-awareness, manage, read emotions, handle relationships,
- to constantly see yourself and the business through the eyes of stakeholders and particularly customers.

4. Understanding processes of venture creation:
- be able to go through the total process,
- know what challenges at each stage,
- know roughly how to handle them.

It should also be mentioned that the entrepreneurship education program for students in the Department of Pedagogical Education is confronted with some challenges. First, the survey results show that the predominant pedagogical methods used are lectures, presentations, and students' individual and group work, while company visits, simulations/mini companies, practitioner guest lectures and developing a prototype are hardly ever used in classes.

Second, despite numerous initiatives focused on forming cross-disciplinary programs for promoting leadership, and launching new curricula that respond to the labour market needs, business and entrepreneurial mindset has not been developed enough in the academic community. So, the change in the academic culture is the common challenge, which includes the introduction of entrepreneurial thinking and acting as alternatives to traditional teaching approaches and opening up the universities to the surrounding society and

industrial ecosystem. Additional resources and university management commitment are required to ensure the coordinated and effective implementation of measures to address this challenge. The use of ICT and in particular eLearning in delivering entrepreneurial education might be an additional option for expanding the outreach of the course.

The entrepreneurship program might seek achieving, among the main goals, to foster entrepreneurial behaviour, skills and mindsets among students in non-business disciplines; to inspire students towards an entrepreneurial career or life, and hence, in future - to increase the number of graduate start-ups and to seek opportunities for commercially exploiting knowledge present at the University.

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