
ENTREPRENEURIAL EDUCATION, INFORMATION TECHNOLOGY AND COMMUNICATION, INNOVATION

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Abstract:

This paper is based on Information and Communication Technology (ICT) as a true tool for entrepreneurship education. In a fast-changing world, basic education is essential for a person to access and apply information to start a business. Entrepreneurship is a valuable competence for EU citizens, in a knowledge society, based on knowledge, favoring personal and professional creation. Entrepreneurial education is essential for Europe's competitiveness and the continuous growth of an economic sale. In this study, over one thousand students from three technological high schools were observed, the behavior and the results obtained after studying the specialized economic modules were analyzed. Our goal was to identify the main challenges of these students. In our study we used both the quantitative method and the qualitative method. We applied questionnaires, topic interviews, direct and participatory observation as data collection tools. The results of this study show that the learning environment plays an important role in shaping entrepreneurial skills and in developing entrepreneurial skills in students.

Keywords:

entrepreneurial education, technology, innovation, knowledge

JEL Classification

L26, D83, P36

Introduction

Promoting entrepreneurship in education as a key competency encourages EU citizens to be enterprising, to find innovative solutions to societal problems and to create products that add socio-economic value, become creative and involved.

One of the main characteristics of the entrepreneur is the ability to combine existing resources creatively. The distinction between invention and innovation, all disrupting the economic changes of the innovations, is followed and the innovator is identified with the entrepreneur.

As the entrepreneur is the source of all economic change, capitalism can only be properly understood in terms of the conditions that give birth to entrepreneurship.

Information and communication technology (ICT) has become the main objective of the 21st century to be integrated socially, economically and culturally. The knowledge economy involves the integration of the flow of knowledge, information, people and services using the technology of knowledge and communication.

Education is a major sector that has undergone the influence of ICT innovations. Students must be able to access, integrate and evaluate information, develop their knowledge and communicate with others to be active citizens in an increasingly complex and rich world of information and knowledge.

ICT transforms not only the teaching process, but also the learning processes. ICT has led to a substantial increase in the preparation, planning and administration of lessons, but also an increase in the use of these technologies even in the teaching and learning process.

Information and communication technology makes all schools "smart". Students, teachers and administrators of education, as well as all the factors involved in education, have benefited and benefited from the integration of ICT in education.

At EU level, according to Flash Eurobarometer Reports, a survey was conducted on the role of entrepreneurship education, respondents were asked if they participated in a school or an entrepreneurial activity that would turn ideas into content or lead to a project (fig. nr. 1).

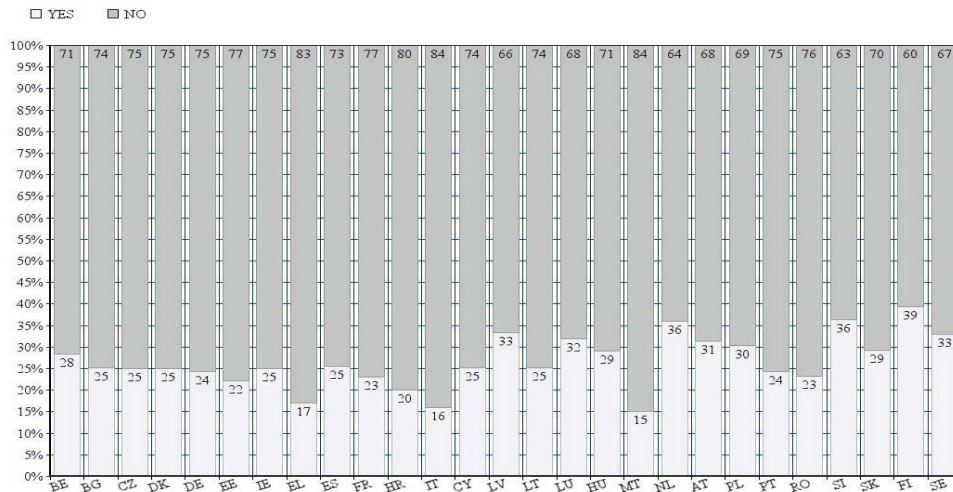


Fig. no. 1 Percentage of respondents who attended a course or entrepreneurial activity, 2012

Source: authors'

The European average shows that less than a quarter 23% answered yes, while quite a large percentage, 76% did not participate in any entrepreneurial courses or activities. The countries with the highest weight are: Finland-39%, Holland-36%, Slovenia-36%. We can see that Romania has a very small percentage 23%, which underlines the fact that students are not involved in such entrepreneurial activities.

Literature review

Economic and social development is increasingly based on the application of information technology in all fields. "ICT is an essential factor for productivity and economic growth, which must be used to accelerate global development, representing the essential infrastructure of the 21st century", emphasizes Waverman, Meschi and Fuss (2005).

The information society is the company in which the production and consumption of information is the most important type of activity. It is characterized by the democratization of information, communication, understanding and cooperation.

Several researchers have studied, analyzed and defined entrepreneurship. Entrepreneurship is any attempt to set up a new business or a new company, or to develop an existing business or company, by an individual, a group of individuals or a firm (Bosma et. Al., 2014, Benyovszki et al., 2011). Entrepreneurship is an activity oriented towards performance and achievements, individuals consuming effort for subsequent financial and non-financial rewards. Among the rewards in the second category we can mention the following: high level of autonomy, job satisfaction, well-being (Hopp and Stephan, 2012).

Education for Entrepreneurship can be seen as one of the contemporary themes of current school and out-of-school education and has also become one of the priority topics of the European Union's education policy. Entrepreneurial education has as its main objective the stimulation of entrepreneurship in the sense of business initiation and property rights or for the development of entrepreneurial skills.

Entrepreneurship is not only a way of creating jobs, increasing competitiveness and developing the economy, it also contributes to personal fulfillment and social goals.

"The digital economy refers to an economy based on digital technologies, although we increasingly perceive this by conducting business through Internet-based markets and the World Wide Web" (British Computer Society, 2014).

The spectrum of ICT use in schools can be classified into four categories: ICT competencies, teaching and learning, management and extension of school boundaries. These four categories are not mutually exclusive. Many of the schools had initiatives in several directions. Interdisciplinarity in the context of school education becomes a key concept, with the help of which an educational approach can be realized centered on the needs of the student, his possibilities and rhythms of learning, on the roles and approaches of the learner. The use of ICT in entrepreneurship lessons is extremely useful for stimulating creativity, critical thinking and analysis.

In this research 1200 students from three technological high schools were observed, from January to March 2020, the behavior and the results obtained after studying the specialized economic modules were analyzed. Our goal was to identify the main challenges of these students. In our study we used a mixed method: questionnaires, topic-based interviews, direct and participatory observation as data collection methods. We started from three hypotheses:

- The attitudes of students towards entrepreneurship do not change significantly after the completion of the compulsory course of Entrepreneurship Education;
- The intention of the students to become entrepreneurs is significantly changed after completing the specialized modules
- Students intention to become entrepreneurs is significantly altered as a result of the acquisition of digital skills.

The study was based on more detailed questions about the role of entrepreneurship lessons in school (fig. nr. 2). The answers to the following questions were analyzed:

- The education I receive in school helps me to develop my entrepreneurial spirit and entrepreneurial attitude.
- The education I receive in school helps me to better understand the role of the entrepreneur and increases the desire to further study this field.

- The education I receive in school offers me the skills and knowledge necessary to start a business.
- The education I receive in school convinced me to start a business.

Half of the respondents agreed that entrepreneurship education develops their initiative and in the same percentage agree that they understand the role of the entrepreneur better. Less than half manage to get the knowledge needed to open a business and less than a quarter want to start a business.

Based on the analysis of these questions it can be observed that: the greater the conviction of the subjects that entrepreneurship education can develop knowledge about the entrepreneurial environment, the greater their desire to continue professional training immediately after graduation, it may be precisely in the entrepreneurial field. On the other hand, the attractiveness of being an entrepreneur increases. The subjects do not come into contact with the practical aspects of entrepreneurship and this makes them reluctant and fearful when it comes to their own business.

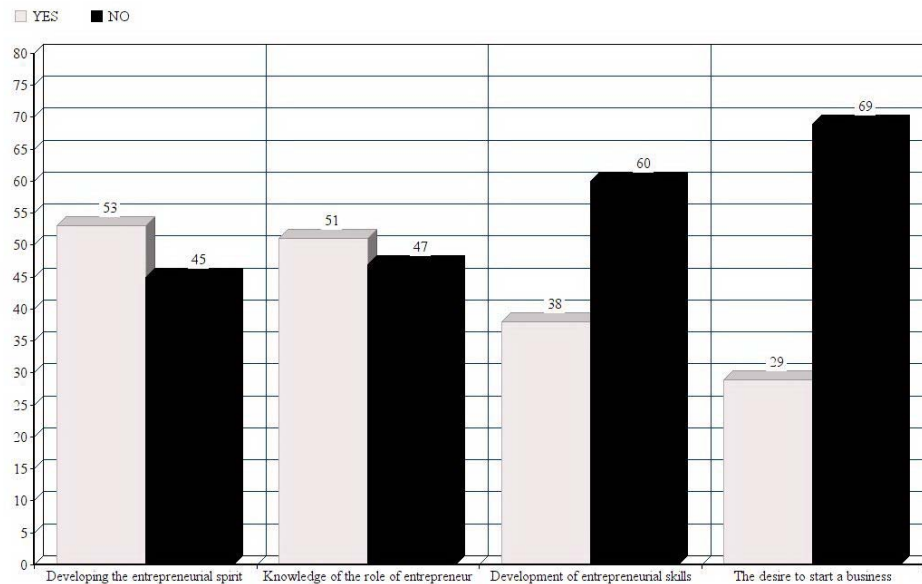


Fig. no. 2 Impact of courses and entrepreneurial activities, 2020

Source: authors

Increasing the belief of the subjects that specialized modules can develop knowledge and skills about the entrepreneurial environment has made the subjects in these groups become more and more eager to set up a business immediately after graduation. The greater the view of the subjects that the specialized modules can develop knowledge, skills and attitudes about the entrepreneurial environment, the greater the determination to do everything to be an entrepreneur and to make every effort to set up and run his own company. The study of the economic modules using the method of the execution companies supports the development of the entrepreneurial competences. The practical aspects encountered in the laboratory hours lead to the rapid development of the key entrepreneurial skills.

Results and discussion

Obviously, education will not solve all the problems that humanity faces today, but it is essential in the effort to connect the members of society, to generate new relationships, to respect the demands of the labor market and the needs of the environment.

Entrepreneur education teachers and specialized modules have the capacity of guiding future entrepreneurs not yet occupying a strong place in the academic environment. In a recent meta-analysis, Bae et al. (2014) show that entrepreneurial education, entailing training in the creation of start-ups, creativity and innovation workshops, as well as the students' entrepreneurial project mentored by the entrepreneurial faculty, increases the intention to start a new business among graduates, even if only a few ever create a company.

Teachers are in the midst of these changes and they have a strong impact on learner performance. They must have the right skills, knowledge and attitudes to provide students with the new education programs, pedagogies and learning environments they will need to acquire entrepreneurial skills. Teachers are those who play a central role. A school environment is needed where creativity and risk-taking are encouraged, and mistakes are appreciated as an opportunity for learning.

Individuals must continually improve their knowledge and skills in response to the rapid pace of changes that occur every day, otherwise there will be economic stagnation. Education institutions dealing with vocational training find it difficult, if not impossible, to correlate their ability to adapt education and curricular offer with the pace of changing labor market needs. In a global and dynamic world, it becomes more important for the skills taught in schools to be relevant to the workplace and to be maintained and improved throughout one's professional life. Building a solid foundation of competencies throughout the school years and providing lifelong learning is probably the viable solution to reduce the skills gap.

Entrepreneurial education helps individuals get better jobs, even if they are looking for a job and not for a self-employed activity. Using a multi-level regression, our results indicate a stronger need for entrepreneurial skills training in higher education institutions, on the one hand, and the introduction of policies that promote micro- and macro-level innovation in the countries' economies. other side.

Economic modules have become extremely important for several reasons. Learning through exercise companies about developing business plans and setting up a company allows students to better understand and integrate finance, economics, accounting, marketing and other business disciplines, providing them with an engaging and enriching educational experience. After all, entrepreneurship education creates links between the academic and business communities.

Students may not have the best business idea today. But this idea can come over 5,10,15 years. By that time, these students will already have a knowledge base about entrepreneurship that will allow them to set up what could be the next successful business. Thus investing in our high school students now, we are training the next generation of entrepreneurs for success. This step is very important. And it is much easier to build the foundation. Efforts supported by entrepreneurship education give students the opportunity to see that there is a chance for successful business if they have the necessary skills.

Moreover, entrepreneurship education lowers the risk of being unemployed and increases the chances of people finding it constantly better paid jobs.

As Alex Gray (2016) says : "Change will not wait for us: business leaders, educators and governments need to be proactive in improving people's qualifications and retraining so that everyone can benefit from the fourth industrial revolution" . Therefore, we have the obligation to create models and contexts to enable this, otherwise we will have a generation without competencies for the new demands of the labor market and which created great problems for society.

Conclusions

This study shows that the learning environment plays an important role in shaping entrepreneurial skills and developing entrepreneurial skills in students. Entrepreneurship in schools has, in many ways, been regarded as school development and different entrepreneurship projects have been conducted for the purpose of developing school activities. At present, it therefore seems highly uncertain whether the widened entrepreneurship perspective will contribute to teachers being able to decide on a clear purpose for entrepreneurship in school activities.

In conclusion, it is very important to follow the development of the main competences for the students who take entrepreneurial courses, namely: self-confidence, initiative, creativity, financial culture, resource management capacity, uncertainty and risk management capacity, teamwork, the ability to evaluate opportunities.

After controlling for pre-education entrepreneurial intentions, the relationship between entrepreneurial education and post-education entrepreneurial intentions was not significant. The results of our survey underline the assumptions that entrepreneurship programs have a positive impact on the development of key skills in the field of entrepreneurship. Students with entrepreneurial skills evaluate their personal entrepreneurial characteristics (sense of initiative, availability at risk, increase of personal esteem). It also develops its creativity, analysis, motivation, adaptability.

The motivation for change and the use of entrepreneurial approaches seems to be better in the fields of vocational schools based on intercultural programs such as Information Technology, Civic Education, Economy, Industry.

A future research should compare the effectiveness of the entrepreneurial education in high-schools of the same type as well as across high-schools of different types (e.g. vocational high-schools with economic/business profile versus vocational high-schools).

Acknowledgements

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