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PRODUZ@IDEIA– An approach project to develop entrepreneurship in primary schools

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Abstract

The greatest barriers to entrepreneurship are the fear of risk and poor entrepreneurial culture of the population. These factors are clearly identified in Portugal, in particular, due to cultural characteristics, because the fear of failure that typically an entrepreneur has to pass is a strong barrier difficult to be overcome. Also being an entrepreneur is socially very penalized, which is not the case, for example in United States culture. In spite of a poor entrepreneurial culture and subsequent difficulties in this area, the Portuguese people are extremely creative and with some guidance they reach their dreams easily. In this sense our project proposes the development of activities to be implemented very early on and empower the entrepreneurial attitude. Therefore, we consider that the elementary school has unique characteristics to the possible introduction of this project, in particular when we hook up with higher education institution connected to the professional practice teaching methodology, the HEI, namely Polytechnic Institutes. It's our intention, consequently, to create a project that consists in stimulating children's creativity to the design of a product, service and/or machine, that children consider important that exists and where, later, teams of teachers and students of a Polytechnic HEI will build/ implement the selected ideas. We pretend to develop our project based on the notion that entrepreneurship is all about the ability of being able to have an idea or dream and put into action is a competence that relies on a problem-based learning process. This methodology, here, will begin with the young children dream explored through creativity and ends with the implementation of the solution/ idea. This empowerment of our children and young people will make them more able to risk and daring themselves to develop their ideas in the future. Thus we are contributing to a better and sustainable future of our society.

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1. Creativity and Entrepreneurship

The role of entrepreneurship in terms of the economic development has been recognized by several theorists over time, among them Schumpeter (1934), Leibenstein (1968), Kirzner (1997), Baumol (2002) and Acs *et al.* (2004).

The entrepreneurship concept has always a reference to the attitudes towards the environment and its response capacity in the sense of constructing solutions that add value to the society. To the European Union (2012), entrepreneurship is related to the individual ability to turn ideas into actions, where this ability is linked to creativity, innovation and risks acceptance, as well as the ability of planning and project management, in order to achieve goals.

Also Heinonen and Poikkijoki (2006) say that entrepreneurial behavior is widespread, which is related to the call for bigger and better business skills in order to face growing challenges and uncertainty of the future. According to these authors, the attributes related to the entrepreneurial activity are high availability for change, self-confidence and creativity, as well as an innovative approach to solving problems.

The innovation idea has been constantly linked on the different aspects of entrepreneurship - in most developed economies, long-term economic growth relies increasingly on business creation and the fact that these generate innovation in terms of products, services and processes. The process of innovation is closely linked with the concept of enterprise, because its creation is in itself an innovation (Drucker, 1985). But the innovation intensity differs depending on the company that creates, since the motivation of organizations to produce innovations is to generate value, thereby increasing its competitiveness and promoting their survival (Mulet, 2011). In this sense initiatives that do not rely exclusively on innovation, but rather in replication, assume also relevance (Kirzner, 1997).

In general, entrepreneurship research shows that the level of entrepreneurship is favored by cultures that value and promote the need for self-realization, autonomy and conquest (Hayton, George and Zahra, 2002). Thus, the antipathy by uncertainty, found by Hofstede (2001) on Portuguese culture is also an inhibitor of entrepreneurship and this trait may explain why the level of companies' creation is low, even when the effort in education for entrepreneurship has evolved positively, particularly in higher education. The challenge with which Portugal has been facing is to replace the culture of penalization of the error for an entrepreneurial culture, opening paths to creativity and innovation (Robinson, 2006, 2001, and Amaral, 2009) and using the error as a form of evolution (Ferreira 2011 and Monteiro 2011 cited in Teixeira, C. 2012). Already Dolabela (2003, p. 30) states that the "*culture has the power to induce or inhibit entrepreneurial capacity*", noting that entrepreneurial education must begin with children, as it may influence their behaviors as future professionals.

The difference between entrepreneurs and non-entrepreneurs is in society (Sadler-Smith *et al.* 2003). The entrepreneur values creativity, takes risks, is based on an informal organizational structure concerned in formulating strategies and in identifying opportunities. The non-entrepreneurial, for its part, emphasizes the planning, control, monitoring, and evaluation is based on a formal organizational structure. It is important, therefore, to create an educational system capable of collaborating with the society in which it is inserted, which can affect change-technological, social, economic – for its development, causing a greater interaction between school and society (Friedlaender, G., 2004).

Creativity is believe to has an important role in the economy since is crucial to assist nations to achieve higher levers of employment and innovation (Davies, 2002 and Burned, 2006 cited in Shaheen, 2010). That's why creativity has to be present in schools in their education curriculum and pedagogy (Wilson, 2005 cited in Shaheen, 2010).

The currently accepted and implemented model, in the European Union, to frame the notion of entrepreneurship education is based on Heinonen and Poikkijoki (2006) propose and its main objective is to provide students with the attitudes, knowledge and skills for entrepreneurial action, having the different dimensions of education for entrepreneurship to be deployed in multiple categories, which constitute the framework of the various learning outcomes implemented and achieved by the countries of the European Union.

To enable a student to acquire entrepreneurial skills is to provide a more creative education, developing his talent and potential. Currently there is an education based on the errors, in denial of the subject (Friedlaender, G, 2004). Through the entrepreneurship teaching will allow students the possibility start from what he knows which means that errors and ignorance become possibilities of creation and new solutions, losing the connotation of failure (*ibidem*, 2004). In this way, learning to undertake should be a stimulating, creative activity and with quality.

Creativity in the current era of innovation is getting increasingly important in which all professionals need to get creative (Corrêa, T., 2008) which is considered as nothing more than an electric impulse in the human brain and a potential boost. In summary, it is inherent to the individual, it can be exercised and developed and must be unlocked and rescued in essence (*ibidem*, 2008). We know that all individuals are born creative and that over time are being blocked and inserted in a social model not to be nonstandard governing the collective spirit. Thus, education for creativity should be based on self-knowledge exploitation (Gardner, 2007). In our society the creativity is sought-after, cultivated, cherished. (*ibidem*, 2007) and for that many entrepreneurs are conducting courses to understand and learn to perceive the intuition which is nothing more than an exercise in self-knowledge.

Despite this reality, it is essential to make it clear that creativity requires hard work, discipline, commitment and above all courage to do different from the majority, pursue unknown paths and often scroll through them alone. This reflection requires a demystification that ideas appear out of nowhere they don't fall from the sky. They need to be cultivated and exercised continuously (Corrêa, T., 2008).

In a proposal of teaching and learning, according to Predebom (2005), our creativity can be induced when adopting pre creative behaviour patterns, enabling the development of a creative personality. Consequently, allows the student to understand his individual process of creation.

2. Problem-Based-Learning (PBL) methodology

We assist to a change in the educational policy in schools around the world to combine creativity and knowledge (Dickhut, 2003 cited in Shaheen, 2010). So, creativity is fundamental for entrepreneurs since they have to have new ideas with novelty, usefulness' and appropriateness to it and also because to have the capacity of creating a sustainable commercial value from those ideas (Duxbury, 2012). In view of the above, we observe how important is to make the link between creativity and innovation which are apparently a paradox. The cognitive psychological perspective show us that this contradiction tendency may be alternatives ways of a more general propensity to people to store information in organized structures and then access this knowledge to implement their activities (Ward, 2004).

In 1994 and 1995, Runco and Chand (Ward, 2004) have described models that includes process of ideation and evaluation that interact between them and with the knowledge and motivation to determine creative results. In addition to these authors, others creativity models include steps as problem definition or discovery (e.g. Basadur, 1996, 1997; Mumford et al., 1991; Stenberg, 1988; Treffinger, 1994; cited in Ward, 2004) in the belief that the way people contextualize a problem strongly influences their probability of reaching an original or creative solution (Ward, 2004).

Other issue is the effective knowledge acquisition, in particularly in a way that creativity can be used to develop innovative solutions. One of the theory for knowledge acquirement that seems to be able to integrate both perspectives is the Problem Based Learning (PBL) because it stimulus people to restructure information that they already know within a realistic context to gain new knowledge and to elaborate on the new information they have learned (Kilroy, 2014). It differs from the "traditional" approaches of teaching because students are stimulated to self-direct learning skills and to be critical in analyzing scenarios and at the same time being objective in collecting additional information to develop the innovative solution for the initial problem (*ibidem*, 2014).

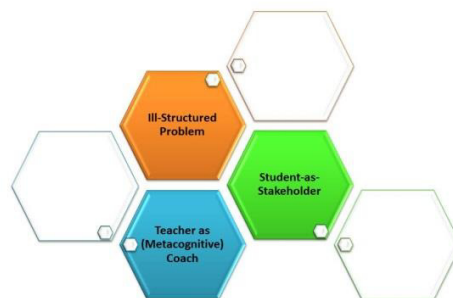


Fig. 2. PBL pillars

PBL relies in a three pillars as shown in Figure 1. Accordingly with several authors (e.g. Shin and McGee, 2003; Barrows, 2002; Dods, 1997; Jones, Beau Fly; Rasmussen, Claudette M.; Moffitt, Mary C., 1997) the “ill structured problem”, that consists of a problem which is described in an ambiguous way, that needs more information research to be more clear and that can be solved in more than one way, that have different possible solutions; the “students as stakeholders” in the sense that they have a significant knowledge that they have to make a useful and meaningful of it and that have to select and evaluate their options, monitoring the process towards the solution and at the same time have to defend and give evidence-driven arguments; and the “teachers as coaches”, as they have to guide the students, in an ethic perspective of the solutions definition process and help them to develop their self-awareness process of thinking and seeking information.

This model helps developing learning and interpersonal skills and potential the learner confidence, while doesn't kill creativity but allowing it to have a crucial part in the resolution/innovation process. It seems that the model may be the one the potential more the entrepreneurs attitudes as they been described before.

3. Produz@ideia project

Analyzing the studies of Gardner (2007) and taking into account the above, we tried to develop a teaching methodology and a method of exploring the creativity that would provide children from the first years of schooling (accordingly to the author just mentioned the children under 5 years are at their maximum exponent of creativity), in primary education, a free development of their creative potential. We want to provide the ability to implement their imaginary, as referred by Dolabela in his Entrepreneurial Theory of Dreams (2003), and therefore contribute to a more effective education of entrepreneurship, enabling future professionals and opposing the current social environment so they may contribute to the behavioral change that, today, it's so urgent.

The proposed methodology is based on modelling creativity, with the goal of breaking paradigms and rescue the children's imagination, unlocking creativity, through playful activities, artistic and interpretative (Cury, 2003).

In order to transform information into knowledge and knowledge into experience, generating experiences (*ibidem*, 2003) and breaking down barriers, we propose to link children's imagination to the technical expertise developed in higher education Polytechnic system in order to implement the ideas and empower children and thus reduce the risk and the inhibition of innovate. In this way we are also able to apply the Problem Based Learning principles, exploring what they already know, developing their abilities of creating new knowledge by seeking and discussion new information within an objective problem situation that needs an innovative solution.

Due to the exposed the imagination application seeks to be an entrepreneurship project to the extent that the ideas are structured and the activities planned. The Polytechnic student may also be motivated by the children's creativity and develops entrepreneurial skills in the sense that it has to reflect and implement an idea.

So, it all begins with the recognition of a necessity/ problem or getting an exist one that it's difficult to solve, goes through an objective definition and means to achieve a solution, a plan of action has to be developed, the resources have to be analyzed and accessed and it's possible to implement a process and a creation.

This didactical methodology of teaching of entrepreneurship is based on a multidisciplinary interaction of different scientific areas to the extent that the products/services imagined by the children may have to be achieved by combining technological and scientific skills.

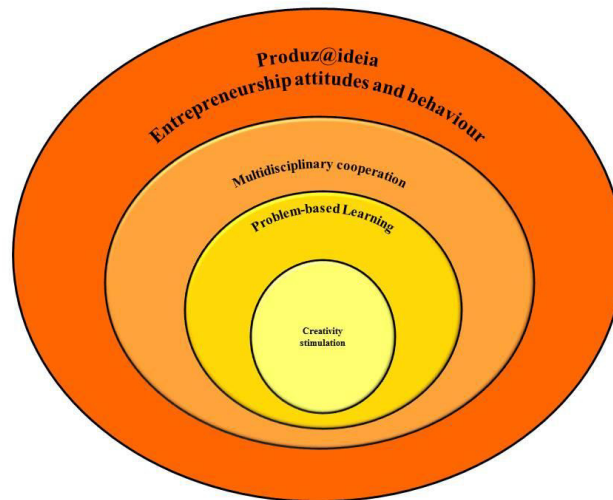


Fig. 2. Produz@ideia interactions

The didactic innovation project we propose, "Produz@ideia", fits on theoretical reflection exposed, intending to promote creativity and enhance the power of realization of dreams or ideas, while entrepreneurial skills. This project was born of the need to find a methodology of entrepreneurship education for teachers of basic education could use in their students.

To be developed by professors of the Polytechnic, naturally drew a design of didactic innovation that makes the bridge between these two levels of teaching, encouraging and using the creative potential of the students of basic education and the power of knowledge and technical realization of Polytechnic School students. In this way Produces @ Idea allows working student's entrepreneurial skills and abilities of the two levels of education.

Objectives of this project are therefore to:

- Encourage creativity in children (elementary school) and young (higher education);
- Empower the entrepreneurial attitude;
- Reduce the fear of risk, through collaboration among peers;
- Making dreams come true, making you believe in their potential for creation, always present;
- Involve the institutions of higher education and primary education.

Is important for the success of this project that everyone involved in the different steps of this process knows what is happening and how the is going to come true. So the ICT are an important tool also to take into account as are through them that easily and creatively we may involve and motivate all the intervenient of this process.

4. Conclusion

In this paper we explain the tendencies of entrepreneurship education and explored the main discussions on how it may be developed based in a more urgent need of creativity integration on educational curriculum and pedagogies, particularly as a way of reaching innovation and applied ideas to the economic context. So the link between creativity and entrepreneurship is made through knowledge. The Problem based learning methodology give also a boost to this knowledge and creativity integration by integrating them in a real life context and directing them to a innovative solution. We believe that our project Produz@ideia combine all these perspectives and we are going to prove it by implementing with some students of the primary school.

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