



Sustainable Entrepreneurship Laboratory

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summary

Currently, diplomas acquired by young people throughout their academic career are not in themselves a sufficient condition for them to have stable jobs and of adequate quality to the level of studies they have completed. The youth unemployment rate in Portugal is high and long periods of inactivity, tending to cause low self-esteem, social exclusion and / or “wage scar”. The passive attitude of these young people will have negative implications for society as a whole in the long run. This study aims to identify a set of actions that allow leveraging entrepreneurial education in Higher Education Institutions (HEIs). The information obtained was collected in face-to-face interviews with the Polytechnic Institute of Porto (IPP) and the University of Porto (UP), through its Technology Transfer Offices (OTIC and UPTEC) and its entities that provide business incubation programs (PDF and UPTEC). Based on the answers, a strategy was drawn up by the authors and a reflection was subsequently made on its possible operationalization. This study suggests the need to act at 3 different levels, namely at the level of Engaging, Empowering and Equipping. Completely in line with the HEI strategy where the actions are developed, the project to leverage entrepreneurial education must have allocated a qualified professional to dynamize it and be responsible for its execution. It must be a self-sustainable project, capable of developing over time and interacting with the local entrepreneurial ecosystem. As possible actions, events, training, innovation and consultancy. The way in which HEI comes out and gets involved in the promotion and dynamization of this entrepreneurial culture will be decisive for its success.

Key words: entrepreneurship, innovation, business modeling.

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1. Introduction

The quality of entrepreneurship education is positively related to the ability to implement strategies centered on experimental learning and involvement in real ventures (Silva, Lopes, Palma, & Lopes, 2013).

Increasingly, Business Modeling (BM) is applied in modern organizations as a way of understanding, exposing and communicating its strategy in the short and long term (Baden-Fuller & Morgan, 2010), being a mechanism for transforming ideas into recipes at a reasonable cost (Gambardella & McGahan, 2010). The goal is to reach your target as soon as possible (Moogk, 2012), using a product / service that delivers the main value proposition, but still has as few features as possible. In this way, it is possible to validate the assumptions, measure the receptivity and evaluate the interaction of the customer with the alleged product / service, in order to be able to make the necessary changes as soon as possible, without wasting many resources in its development (Moogk, 2012).

The best way to inspire people and show that entrepreneurship is a real option for your future, is to go through the arduous path of developing your own project and then pass on your story. Often success is the sum of several failures that allow to acquire and internalize knowledge, which make the entrepreneur more "robust" technically and emotionally.

Accordingly, the objective of this article is to identify a set of actions that allow leveraging entrepreneurial education in HEIs. The information obtained was collected through face-to-face interviews with the Polytechnic Institute of Porto (IPP) and the University of Porto (UP), through its Technology Transfer Offices (OTIC and UPTEC) and its entities that provide business incubation programs. (PDF and UPTEC). The article is organized as follows: in point 2. there is a review of the literature on the key role of entrepreneurship for sustainable development and the obligation for HEIs to adapt their educational offerings to new social needs, placing the emphasis on collectivity and in building a long-term future, with increased bonds with society. In point 3., the methodology developed for the collection of information is described and in point 4. a strategy is drawn accordingly. In point 5. we reflect on a possible operationalization of the strategy designed and finally, in point 6., the main points raised by this article are identified, its main limitations and some clues are indicated for future research in the scope of this theme .

2. Literature revision

There is a growing consensus that entrepreneurship is the key to sustainable development, being critical for poverty reduction, gender equality and environmental sustainability (UNCTAD, 2015). There is also a positive correlation between the entrepreneurial spirit and economic results in terms of growth, survival, innovation, job creation, technological evolution, increased productivity and exports (SCALES-initiative, 2009).

As a whole, entrepreneurial initiatives - new business or reorientation of an existing business - are the engine of the market economy in generating wealth. In the social field, entrepreneurship is also a means of serving other social objectives, such as job creation, the insertion of disadvantaged groups into work, the diversity of options for consumers and, ultimately, the increase in the quality of life of the community where you are inserted (Casimir & Samuel, 2015).

Higher Education Institutions (HEIs) represent the organizations with the greatest capacity to generate and disseminate knowledge and to transform knowledge into social and economic utility. Traditionally, it has been assumed that the level of education acquired during studies at HEIs should qualify students to perform their professional activity and satisfy the demand for qualified people that the market is looking for. Academic programs are more focused on the training of professionals and employees, than on offering responsible and qualified entrepreneurs to society (CINDA, 2000). But the profound changes that we have witnessed in recent years and the instability of the market poses a huge challenge to HEIs, particularly when they are faced with the adequacy of their educational offerings to the new social needs, based on an assumption of maximizing the efficiency of the generated human capital. And this is where entrepreneurship works, which can be seen as a first step towards achieving that goal (Aponte-Hernández, 2015).

Entrepreneurship is often related to a reducing vision, applied almost exclusively in relation to business creation and self-employment. However, entrepreneurship presupposes a broader concept of basic life skills, including creativity, innovation and risk taking, as well as the ability to plan and manage projects in order to achieve the objectives (Davison, 2015).

All of these skills are transferable and multifunctional and, consequently, important to meet the individual needs of personal development, social inclusion and employment. In this perspective, we are facing an approach to personal qualities, allowing for better self-management and use of the various sources of opportunities that may arise for individuals on the path to their personal fulfillment. From this perspective, entrepreneurship is, above all, a matter of attitude, which is reflected in a person's motivation and ability when he identifies and takes advantage of an

opportunity to add value to the market and society (Dieguez, 2011). Entrepreneurship is a basic competence that should be promoted in education systems, not only as a concrete subject, but also as a teaching methodology and with a transversal perspective, thus understanding entrepreneurship as a transversal or specialized competence (Ares, 2014)

Entrepreneurship education should aim to "bring" business reality to students, in order to know, be willing and able to channel human capital to create economic and social value, both through self-employment and through mobilizing their entrepreneurial dynamism in paid employment. The contents of education for entrepreneurship should basically be of three types: 1) conceptual - related to the acquisition of knowledge, 2) procedural - related to the development of skills and competences - and 3) attitude - related to the internalization of attitudes (Sinkovec, 2013)

Within the conceptual contents are the recognition of existing opportunities for personal, professional and commercial activities, as well as other aspects of greater scope that provide the context in which people live and work, such as an understanding of the general functioning of the economy and of the opportunities and challenges that face every entrepreneur and the organization. People must be aware of the ethical stance of companies and how they can be a positive and environmentally friendly impulse (D'Amato, Henderson, & Florence, 2009)

Regarding skills and competences, the contents must be related to proactive project management (including skills such as planning, organization, management, leadership and communication, among others), individual and collaborative work within a team and effective representation and negotiation. It is also essential to determine your own strengths and weaknesses and to assess and take risks, when justified. (Hull University Business School, 2015)

As for the attitude, the contents should help to develop and promote initiative, proactivity, independence and innovation, both in private and social life and in professional life. The question of motivation and determination when it comes to meeting personal goals or goals posted in common with others, including those pursued in the workplace, is also essential (European Commission, 2012; Meta, 2013; European Commission, 2015).

The successful development of an idea is influenced by the different balances generated during an enterprise between emotions and the entrepreneur's reason (Nassif, Ghobril and Silva, 2010), and emotions are the ignition for entrepreneurship (Cardon, Gregoire, Stevens, & Patel, 2013), helping to stimulate creativity and the recognition of new patterns of fundamental information for the discovery and exploration of promising opportunities (Cardon et al., 2013).

Positivity and joy in HEIs are associated with greater entrepreneurial activity (Audretsch & Belitski, 2015): positive mood and feelings, life satisfaction, better performance in tasks and

productivity, career development, personal success and greater propensity to take risks. However, passion should not be the only “force” to influence entrepreneurial action, so that the entrepreneur does not lose the ability to carefully evaluate ideas and act without planning (Vidigal and Nassif, 2013). Emotionally competent people are more likely to master mental habits and deal with their own feelings, working towards their goals, in addition to making assertive decisions about their lives, in order to relate better with other people (fig. 1).

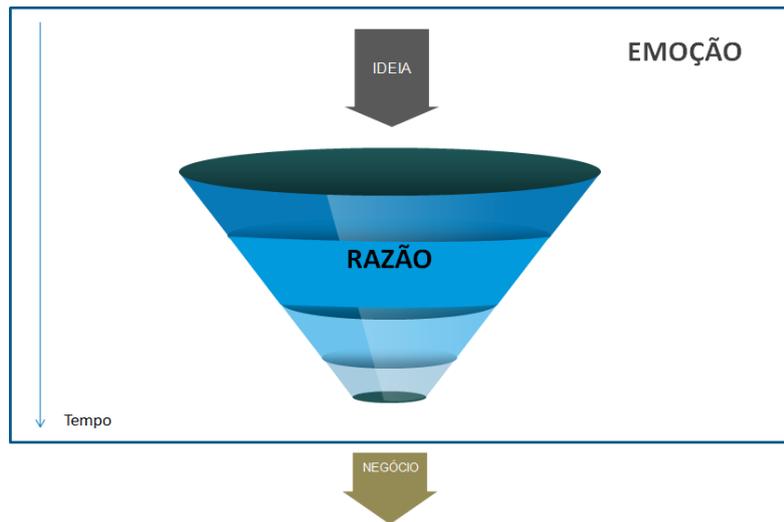


Figure 1 - Balance between entrepreneur's reason and emotion

Higher Education Institutions are in a critical phase in which it is necessary to change the model of education, based on individualism, competitiveness and short-term benefits, with a model that places the emphasis on the community and on building a sustainable long-term future. term, with increased links with society (Thematic Report, 2013). This revolution will be all the faster the more interconnected are all the agents involved in the change.

3. Methodology

For the present study, the Lean Canvas was used, designed by Maurya (2012), which aims to capture the most uncertain or risky in the development of a new business. Divided into 9 sections with sizes proportional to its importance, it serves mainly as a roadmap for the entrepreneur.

6 people directly involved in the dissemination of entrepreneurial education were interviewed (fig. 2) - three within the Polytechnic Institute of Porto (IPP) and three within the University of Porto (UP) - and the aim was to validate the canvas at every moment .

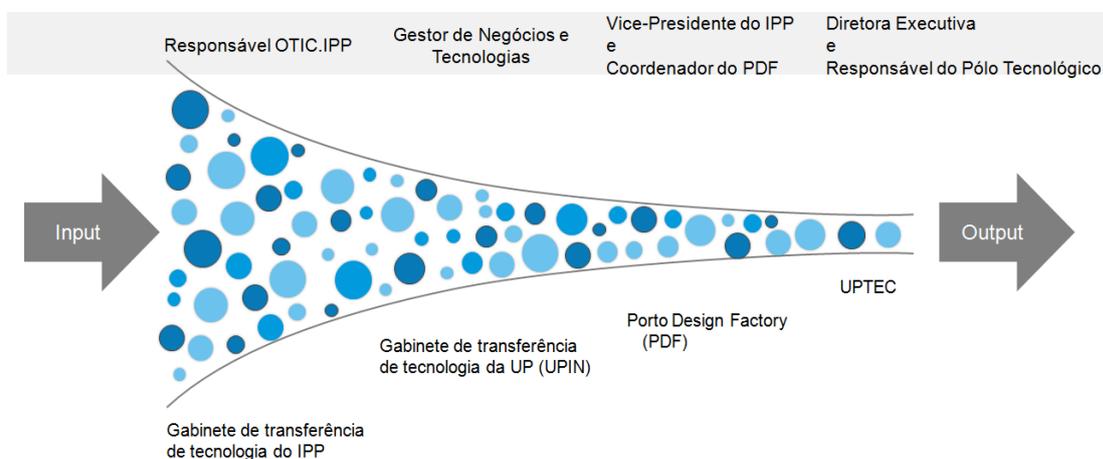


Figure 2 - Interviewees for Lean Canvas validation

The institutions that participated in the study were the Polytechnic Institute of Porto (IPP) and the University of Porto (UP), through their Technology Transfer Offices - OTIC and UPTEC - and their entities that provide business incubation programs - PDF and UPTEC. The institutions were selected based on their performance and geographical location, as well as their potential to help identify good practices and find solutions for creating a strong entrepreneurial culture within HEIs.

4. Strategy design

Problem: Currently, diplomas acquired by young people throughout their academic career are not in themselves a sufficient condition for them to have stable jobs and of adequate quality for the level of studies they have completed. (Lobo, Ferreira, & Rowland, 2015).

In 2014, the youth unemployment rate in Portugal was around 34.8% in the age group between 15 and 24 years old and exceeded 50% in unemployed young adults between 25 and 34 years

old. The latter having been in this situation for more than a year, “insertion unemployment”, marked by moments of temporary intermittence when entering the labor market, can stop being temporary and intermittent to become a structural condition(Lobo et al., 2015). As a consequence, long periods of inactivity arise, which tend to cause low self-esteem, social exclusion and / or “wage scar” in young people. The passive attitude of these young people will have negative implications for society as a whole in the long run.

Customer Segment: The main clients of entrepreneurship education involved in this study are students who take courses taught at Higher Education Institutions (HEIs) in the north of Portugal, with a desire to develop skills and / or an entrepreneurial project.

Value offer: Create a culture of positivity that leverages entrepreneurial activity and allows students to learn by doing in a relaxed, fun, cooperative and interdisciplinary way.

Solution:Empower all HEI students with the entrepreneurial skills (creating opportunities for students to apply the knowledge acquired in the classroom in a real context) and entrepreneurial skills (promoting self-knowledge and developing pro-social attitudes and skills in students) necessary for the development of any undertaking autonomously. Provide students with the tools and services necessary to transform their idea into an implementable and viable business.

Key Metrics: The expected impact of each of the objectives allows the construction of the key metrics to be used to assess the successful implementation of this project. To measure the success of this strategy, three metrics can be used, namely: 1) Rate of students who consider creating their business, 2) Rate of students who have tried to develop a business and 3) Rate of active entrepreneurial students.

Channels: The channels used will be personal contact within the IES grounds and online social networks that have changed the relationship of its users with the causes that move them (Marktest Consulting, 2013)and whose number of users has increased noticeably among the generation known as millennials (born between 1980 and 2000). Communication must be done through simple, clear, direct and action-oriented language, with the aim of building public understanding, trust, loyalty and stimulating individual commitment(Patterson & Radtke, 2012).

Cost Structure: the fact that the strategy is implemented within an HEI allows creating synergies taking advantage of the resources held by the institution concerned. Regardless of whether this strategy implies the creation or not of a company, some specific costs would always have to be borne, namely the full cost of a person responsible for promoting the project, the cost associated with promoting promotional and entrepreneurial training actions and the cost of development, maintenance and creation of online content from the IES Social Network;

Revenue Sources: Although public sector financing is essential to ensure that entrepreneurial training and promotion projects within HEIs become operational, it will be necessary to find additional sources of revenue that will make them sustainable in the medium and long term, namely: Sponsorships, Intermediation Commission and Services provision.

Competitive advantage: Strategy to be implemented geographically within the HEI and with total strategic alignment with it (fig. 3).

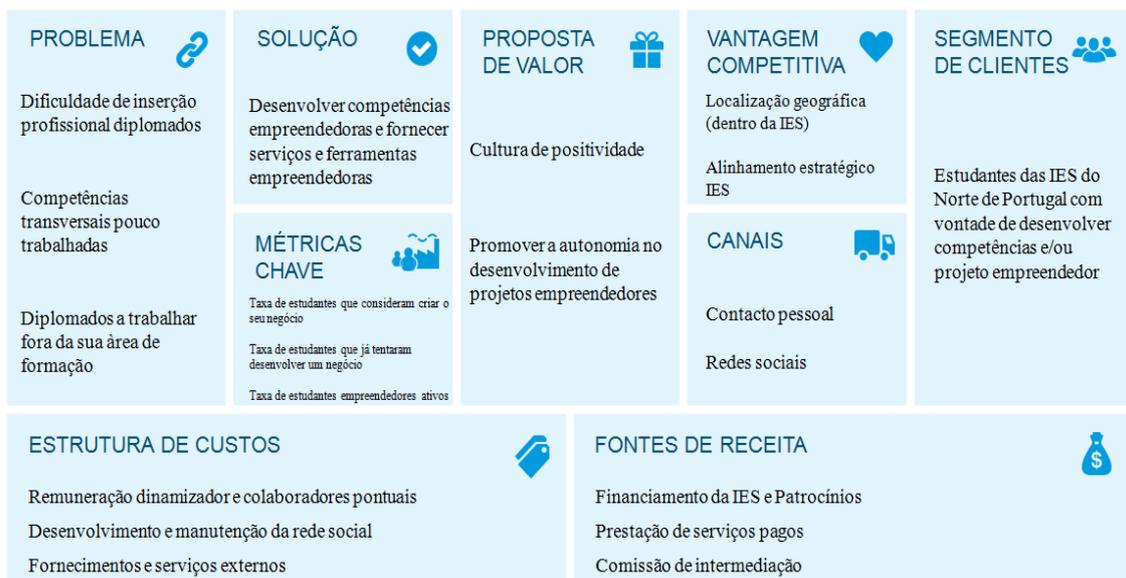


Figure 3 - Lean Canvas IES

5. Operationalization of the strategy

The operationalization of the strategy depends on actions that can be implemented in the short as well as in the medium and long term that allow leveraging entrepreneurial education within

the HEI. These actions can be classified into four types (events, training, innovation and consultancy) and it is through these that the HEI interacts with the local entrepreneurial ecosystem (fig. 4).



Figure 4 - IES entrepreneurial ecosystem

Events: they help to attract and commit students and other stakeholders of the entrepreneurial ecosystem to the IES strategy, thus making entrepreneurial experiences more pleasant and robust.

In entrepreneurship all people are important and that is why it is essential that everyone knows each other. For that, we suggest the implementation of an activity that consists of interviewing a student per day in order to know their tastes, motivations and short, medium and long-term goals, in addition to making them known to the school community through the publication of the interview in the online newspaper. This initiative also aims to generate interaction between students.

For an entrepreneur, reasoned opinion and logical thinking are relevant. Developing activities that encourage students to discuss everyday problems and formulate their own opinion, helps to understand that reality is multidisciplinary, information is often incomplete and it is in this context that important decisions are made.

Teaching is also a way of learning and consolidating knowledge, because it is through this act that doubts arise that would not otherwise be perceived. It is in this sense that HEIs must challenge their students to undertake entrepreneurship workshops in secondary, preparatory and basic schools in the municipality in which it operates. This initiative will help to train communication and stimulate the ability to speak in public, as well as give some visibility and reputation to students who participate.

Communicating ideas is the best way for the entrepreneur to captivate and engage third parties, so it is suggested the monthly implementation of a day for students to present their ideas to a panel of entrepreneurs, who will give them feedback on the idea and the best way to communicate, providing an opportunity for continuous improvement.

Relaxation, music and good humor are some of the elements that boost creativity, so it is suggested to create a relaxed event where students can share their ideas with their peers, while eating, drinking, playing, singing, dance, collecting inputs that can be interesting and where they can find potential walking partners. During the event, it is suggested that dynamics be developed to generate interaction between the participants.

Understanding all stages of the entrepreneurial process (generating the idea, building the team, preparing the business plan, rapid prototyping and presenting the idea to a panel of experts) helps the student to structure his reasoning and the way he acts in each time. That is why it is suggested to create an event with a quarterly periodicity that lasts 3 days, whose objective is to help students to understand the whole process in an accompanied manner and to create the opportunity to interact with other potential entrepreneurs with different skills, always accompanied by mentors. and experienced coaches and in a relaxed and fun environment.

Formation: Students should develop "hard" skills and qualifications closer to business management and "soft" skills such as creativity, proactivity, leadership, risk-taking and the ability to recognize opportunities (Silva et al., 2013).

Entrepreneurial skills should be developed through bootcamps and short and medium-term workshops that should focus on, for example, the following themes, vocabulary and basic entrepreneurial concepts of entrepreneurship, personal development and self-knowledge, design thinking, disruptive innovation and business modeling.

The lack of mastery of concepts and vocabulary can lead the student to feel inferior in some contexts, which can cause demotivation and disinterest.

The student who knows his / her strengths and weaknesses is better prepared to take advantage of opportunities and ward off the threats that appear to him / her on a daily basis.

The design thinking methodology provides new models of processes and tools that help to improve, accelerate and visualize each creative process, carried out not only by designers, but also in multidisciplinary teams in any type of organization.

Disruptive innovation gives rise to new markets and business models, presenting more efficient solutions than those existing to date. In other words, it causes the rupture of an old business model and changes the existing competition bases.

Innovation: Business skills must be developed through challenges launched to students and teachers jointly, which may come directly from the business fabric, or which may be placed by the HEI. In this sense, it would be interesting to create joint teams of students and teachers, who would try to detect flaws in the markets that correspond to the areas of competence of the HEI and then try to find solutions for them.

The IES Entrepreneurial Social Network is a tool that will help cement the institution's strategic communication. The incorporation of concepts normally applied to games in the social network helps to generate a greater connection between people and entrepreneurship (gamification), provoking strong motivation in students who perceive inter-team competition and intra-team collaboration as an asset. It is suggested that this social network has the following characteristics:

- self-assessment tool of the user's entrepreneurial skills at all times and record the results in their profile;
- *dashboard* the challenges launched (team, status, prize);
- database with success stories and guides to support the development and implementation of ideas;
- online newspaper where it is possible to disseminate, follow all initiatives associated with entrepreneurship.

Consulting: Creating a junior company jointly managed by students and teachers that provides consultancy services in the areas of competence of the HEI is another way to help students develop skills in a real context.

6. Conclusion

The quality of education for entrepreneurship is positively related to the ability to implement strategies centered on experimental learning and involvement in real ventures. Since entrepreneurship is, above all, a question of attitude, which is reflected in a person's motivation and ability when he identifies and takes advantage of an opportunity to add value to the market and to society, it constitutes a basic competence that must be promoted in education systems, not only as a concrete subject, but also as a teaching methodology and with a transversal perspective. Higher Education Institutions (HEIs) are in a critical phase in which it is necessary to change the model of education, based on individualism, competitiveness and short-term benefits, for a model that emphasizes the community and the construction of a long-term sustainable future, with increased links with society. Creating a culture of positivity in HEIs that leverages entrepreneurial activity and allows students to learn by doing in a relaxed, fun, cooperative and interdisciplinary way may be a solution. For this, it will be essential to train students with the entrepreneurial and entrepreneurial skills necessary for the development of any enterprise autonomously, as well as providing the tools and services necessary to transform their idea into an implementable and viable business. Creating a culture of positivity in HEIs that leverages entrepreneurial activity and allows students to learn by doing in a relaxed, fun, cooperative and interdisciplinary way may be a solution. For this, it will be essential to train students with the entrepreneurial and entrepreneurial skills necessary for the development of any enterprise autonomously, as well as providing the tools and services necessary to transform their idea into an implementable and viable business. Creating a culture of positivity in HEIs that leverages entrepreneurial activity and allows students to learn by doing in a relaxed, fun, cooperative and interdisciplinary way may be a solution. For this, it will be essential to train students with the entrepreneurial and entrepreneurial skills necessary for the development of any enterprise autonomously, as well as providing the tools and services necessary to transform their idea into an implementable and viable business.

It will be necessary to act at 3 different levels, namely in the creation of opportunities and in the development of skills (Engaging), in the creation of entrepreneurial and entrepreneurial learning opportunities (Empowering) and in the support in the creation and development of business (Equipping). In a view of total strategic alignment with the HEI where it is developed, the project must have allocated a qualified professional to dynamize it and be responsible for its execution. In addition to being self-sustainable, the project must be able to develop over time and interact with the local entrepreneurial ecosystem. As possible actions, events, training, innovation and consultancy are pointed out.

The main limitation of this study is the total dependence on success in the way in which HEI

assumes itself and is involved in the promotion and dynamization of this entrepreneurial culture. As future research, it is recommended to study the profile of teaching staff and their approach to these issues.

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