ASSESSMENT OF ENTREPRENEURIAL EDUCATION IN HIGHER EDUCATION INSTITUTIONS, USING HEInnovate

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Abstract

Following an initiative of the European Commission, DG Education and Culture and the OECD LEED Forum, and supported by a panel of six independent experts, related to entrepreneurship, education and local development, HEInnovate is an online guidance and self-assessment tool for Higher Education Institutions (HEI). HEInnovate is designed and developed as a tool to help HEI assess what they need to change or improve, in order to understand the new challenges they face as an entrepreneurial and innovative HEI, and comprises eight self-assessment areas. In this sense, HEI should develop the capacity to deal with complex social and economic issues, play a proactive role in the use of new knowledge for society and enterprises, assume an interactive role in cooperation and contribute to the sharing of knowledge with business and society in general. This paper aims to use HEInnovate as a self-assessment tool for HEI that wish to exploit their entrepreneurial and innovative potential, namely in the dimension of “Entrepreneurship Development in Teaching and Learning”, and to analyse the Guarda Polytechnic Institute (GPI) as an Institution, in a global perspective, or in a segmented way, to its four Organic Units and eleven Technical-Scientific Units. Although it is still a study in implementation, it is intended to demonstrate the importance of its application for the creation of an entrepreneurial culture and innovation in the case presented, both internally and externally.

Keywords: Higher Education Institutions, Entrepreneurship Education, HEInnovate.

1 INTRODUCTION

The complexity and turbulence of global economies and societies affect a wide variety of organizations, where HEI are included. Universities are increasingly moving towards more entrepreneurial configurations in an attempt to seek more development, more innovation, and more social and economic commitment [1].

The importance of this theme leads to the analysis of how HEI, in Portugal, are dealing with these challenges, how they are addressing and engage in solutions to maintain and improve their capacity of attraction of students and knowledge transfer, so they contribute for a better society a social and economic development. Not every HEI has the same capability in adapting and find solutions to quickly improve and answer to these types of challenges.

The purpose of this study is to perform the self-assessment of an HEI and observe and reflect on the level of adoption and the integration of entrepreneurship development methods in teaching and learning, in particular to support entrepreneurship and innovation in Guarda Polytechnic Institute (GPI).

To achieve the goals proposed, this paper will begin presenting a brief description of the main Entrepreneurship education concepts and major findings, to allow the presentation of the methodology definition and the results of the study in itself, presenting the main conclusions of the research.

1.1 The Entrepreneurship Education Context in Higher Education Institutions

In contexts of high youth unemployment, economic crises and rapid changes linked to the complex economy and knowledge society, it appears that soft skills, especially entrepreneurship, are essential for young people to become active, creative and entrepreneurial citizens [2]. In this context, Universities have been increasingly recognized as a source of entrepreneurial activity [3], and within these are the academics who have come to play a more prominent role in the development of a knowledge society [4] [5] [6].
According to the European Commission [7] entrepreneurship is an essential competence for growth, employment and personal fulfilment. The overall goal will be "to ensure that young people can systematically acquire entrepreneurial competences across all phases of the education system" [7].

The entrepreneurship education is one of the facilitating elements for the promotion of innovation and creativity, as well as for strengthening the social, cultural and economic society growth and development [8]. In 2005, Fleming adds that entrepreneurship education makes young people aware how to create their own work and encourages them to be more creative in finding more opportunities [9].

The European Commission in its communication "Rethinking Education: Investing in Skills for Better Socioeconomic Results" [3], emphasizes transversal and particularly entrepreneurial skills. Thus, the main objective of entrepreneurship education in higher education should be the development of entrepreneurial skills and mentalities. In this context, entrepreneurship education programs may have different objectives, such as: (i) developing entrepreneurship among students (awareness and motivation); (ii) train students in the skills needed to create a business and manage their growth; (iii) developing the entrepreneurial capacity to identify and exploit opportunities.

Although it is a relatively recent field of research, there is already a solid body of evidence demonstrating the benefits of entrepreneurship education for both the individual and society. While some countries have been involved in this process for more than a decade, others are still starting to approach entrepreneurship education as part of their educational policies [3] [10].

Not all HEI have governance structures that allow them to involve social partners, trade associations and other external actors in the design and implementation of business programs. At their level of responsibility, HEI could [11]:

1. Establish a strategy and an action plan for teaching and research in entrepreneurship, incorporating activities based on practice, including the creation of new businesses (start-ups e spinoffs);
2. Create an education department for entrepreneurship, which will serve as entrepreneurship centre at the institution and disseminate entrepreneurship education in all other departments;
3. Offer content related to the introduction of entrepreneurship and self-employment to all HEI students in the first year, allowing them the opportunity to attend seminars and lectures on this subject;
4. Establish incentive systems to motivate and reward teachers in supporting students interested in entrepreneurship, recognizing the academic value of research and activities developed in this field;
5. Develop and implement clear institutional rules on matters relating to intellectual property;
6. Grant academic credits for practical work in business projects outside the established courses.

Entrepreneurship education should not be confused with general and economic business studies, since its purpose is to promote creativity, innovation and self-employment, and may include the following elements [11]:

1. Development of personal attributes and competencies that form the basis of an entrepreneurial mindset and behaviour (creativity, sense of initiative, risk taking, autonomy, self-confidence, leadership, team spirit, etc.);
2. Sensitize students for self-employment and entrepreneurship as a possible career choice;
3. Develop specific business skills and knowledge on how to start a business by running it successfully.

For all this, we can conclude that HEI constitute a place that drives the construction of new learning, experiences and knowledge, with the mission to train professionals, to face the new political, economic and social challenges.

In this context, HEInnovate was designed and developed to help HEI to assess what they need to change or improve, in order to understand the new challenges, they face as entrepreneurial and innovative institutions [12].
1.2 Key Constituents and Characteristics of Entrepreneurial University – HEInnovate Framework

The incentive for HEInnovate was the University-Business Forum in March 2011, an annual event organised by the European Commission for HEI and their key strategic partners where delegates expressed a need for support and guidance in implementing practices to help them become more innovative and entrepreneurial institutions.

HEInnovate was developed collaboratively by the Directorate-General for Education and Culture (DG EAC) of the European Commission and the Centre for Entrepreneurship, SMEs, Local Development and Tourism of the Organisation for Economic Co-operation and Development (OECD). The OECD and the European Commission have combined to promote [12], a major research initiative and an evidence-based tool, which attempts to evaluate entrepreneurial practices in higher education institutions. HEInnovate was supported by a network of innovation and entrepreneurship professors and a panel of independent experts from across European Union countries.

Based on the OECD guiding framework for entrepreneurial universities, their research work has identified the entrepreneurial characteristics of HEI and enables organisations to evaluate themselves against best practice. It was developed for HEI to organise a participatory stocktaking exercise to review achievements and identify areas for improvement. It is possible to involve a wide range of stakeholders (leadership, staff, academic and administrative staff, key partner organisations etc.), and to repeat the exercise over time.

HEInnovate1 tool is a freely available online self-assessment tool (www.heinnovate.eu) and provides a guiding framework for the entrepreneurial university presented as eight dimensions. These eight key constituents include: (1) Leadership and Governance, (2) Organisational Capacity: Funding, People and Incentives, (3) Entrepreneurial Teaching and Learning, (4) Preparing and Supporting Entrepreneurs, (5) Digital Transformation and Capability, (6) Knowledge Exchange and Collaboration, (7) The Internationalised Institution and (8) Measuring Impact.

The eight dimensions in HEInnovate [13] can be summarised as follows:

Leadership and governance are two critical and challenging factors in developing entrepreneurial and innovative HEI. Positive and responsive leadership is what maintains a dynamic and successful organisation, particularly in times of uncertainty, unpredictability and complexity. Leadership and governance can stimulate innovation of all kinds in an organisation that is held together by a shared vision and culture, not overloaded with managerial systems, constantly striving for its autonomy via the entrepreneurial management of its various interdependencies with stakeholders.

Organisational capacity: funding, people, incentives. Entrepreneurial and innovative HEI continuously aim at developing their organisational capacity. To this end, incentives and rewards are in place for entrepreneurship champions, staff, students and stakeholders who are promoting the entrepreneurial agenda, and removing barriers and constraints within the organisation. The aim is to empower individuals throughout the organisation to own their own initiatives, engage in innovation and build personal trust-based stakeholder relationships across external and internal boundaries in search of synergy.

Entrepreneurial teaching and learning require something other than standard textbooks and ordinary classroom settings. An ‘entrepreneurial’ pedagogy seeks to enhance entrepreneurial capacities and capabilities amongst students by giving them more autonomy and responsibilities in the learning process through experimental, collaborative and reflexive learning.

Preparing and supporting entrepreneurs entails teaching strategies and learning environments which offer targeted support for students and staff that aim at setting up a business. HEI can provide this support directly themselves or refer potential entrepreneurs to specialised start-up support services within the (local) entrepreneurship ecosystem.

Digital transformation and capability cut across all aspects of modern HEI. It is increasingly important that institutions make the most out of the opportunities afforded by digital technologies, which are a key enabler of innovation and entrepreneurship. Ensuring that HEI can do so entails fostering a positive digital culture, developing and maintaining a fit-for-purpose and up-to-date digital infrastructure that serves the strategy and the missions of the HEI, and developing digital

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1 For each of the eight dimensions, Guidance Notes are available online on www.heinnovate.eu.
competences among staff and students to fully exploit the opportunities provided by digital technology and tools.

Knowledge exchange and collaboration is determined by the perceptions of the respective "other". A negative attitude towards entrepreneurship, entrepreneurs and businesses within a higher education institution can limit and hinder network formation and collaboration with business partners. Communication that ensures that both sides of a knowledge exchange network have a clear understanding of respective expectations, limitations and requirements, is a major building block of the entrepreneurial and innovative HEI.

The internationalised institution. Internationalisation is an important indicator for quality in higher education and it represent a vehicle for continuous change and advancement. HEI can internationalise through their activities in teaching, research and knowledge exchange, and through their staff and students. Becoming a truly internationalised institution will build on both.

Measuring impact of certain practices on the entrepreneurial and innovative HEI is neither easy nor straightforward. To measure the impact of the entrepreneurial agenda, it is important to start by monitoring and reviewing entrepreneurship within the leadership of the higher education institution. This will help establish an understanding of how important entrepreneurship is to the governing and executive boards – compared to other strategic objectives, such as, for example, sustainability, excellence in research, attraction of international students. Excellence is judged through the eyes of all its stakeholders in pursuit of the creation of public value.

As seen above, HEInnovate presents a variety of ways in which higher education institutions can act in an entrepreneurial and innovative way in their strategies and practices, and it is essential to do so from a whole institution perspective. Although there are already some case studies that prove the usefulness of the HEInnovate tool for self-reflection and evaluation, guiding and providing a diagnosis and consequent strategic direction in the context of the entrepreneurial development of the HEI, the Dissemination of the tool is still not enough to produce the desired impact. In recent studies it was possible to analyse 31 case studies of European HEI created based on the methodology of HEInnovate [14].

1.3 Entrepreneurial Teaching and Learning

As mentioned above, an "entrepreneurial" pedagogy seeks to increase entrepreneurial skills and capacities among students. This will be achieved if they are given more autonomy and responsibilities in the learning process, using experimental, collaborative and reflexive learning [13].

In this way, entrepreneurial teaching and learning lead to the exploration of innovative teaching methods that will address ways of stimulating the entrepreneurial mindset. It is not just learning about entrepreneurship, it is also about being exposed to entrepreneurial experiences and acquiring the skills and competences for developing entrepreneurial mindsets.

The self-assessment of the "Entrepreneurial Teaching and Learning" dimension of the HEInnovate results from the response given the following 5 statements: (i) HEI provides diverse formal learning opportunities to develop entrepreneurial mindsets and skills; (ii) HEI provides diverse informal learning opportunities and experiences to stimulate the development of entrepreneurial mindsets and skills; (iii) HEI validates entrepreneurial learning outcomes which drives the design and execution of the entrepreneurial curriculum; (iv) HEI co-designs and delivers the curriculum with external stakeholders; and (v) Results of entrepreneurship research are integrated into the entrepreneurial education offer.

The statements of the Entrepreneurial Teaching and Learning dimension, includes several activities and topics of reflection, namely: (i) Provide mechanisms for students to engage in review and feedback on courses; (ii) Introduce new mechanisms for supporting students, including experiencing starting new ventures within the students' formal education or delivering entrepreneurship education with practising entrepreneurs; (iii) Support access to student enterprise clubs, awards and societies; (iv) Organise networking events between students and entrepreneurs/businesses; (v) Engage students in business idea/plan competitions as part of their extra-curricular opportunities; (vi) Formally recognise extra-curricular activities; (vii) Ensure students have a clear understanding of the entrepreneurial learning outcomes expected and achieved; (viii) Regularly review and assess the involvement of external stakeholders in course design and delivery; (ix) Integrate external stakeholders’ experience and expertise into the development and delivery of extra-curricular learning activities and support services; (x) Support a diversity of collaborative partnerships with local communities and organisations, local and regional governments, chambers of commerce, industry and
HEI alumni and (xi) Encourage staff and educators to review the latest research in entrepreneurship education and provide a forum whereby staff and educators can exchange new knowledge and ideas, incorporating the latest research.

2 METHODOLOGY

2.1 Case study

Located in the centre region of Portugal, the Guarda Polytechnic Institute is a small Portuguese polytechnic institution (approximately 3000 students and 250 teachers), which began its teaching activities in 1986 and has been focusing on quality, in connection with the business, cultural and social environment of the region, as well as in cooperation with Portuguese universities and polytechnics and foreign institutions [15].

The GPI is an institution of higher education dedicated to preparing students for their future professions and is made up of four schools: The School of Education, Communication and Sport (oriented towards teaching, scientific investigation and support to the community); The School of Technology and Management (provides higher education in the areas of technology and management. Its aims are teaching, research and other scientific and technical activities. It has a fundamental link to the local community, promoting human resources, an area that is indispensable for the process of modernization); The School of Tourism and Hospitality Management (provides higher education in these two areas. The main priority of this school is to offer higher qualifications and to train future tourism professionals for the needs of the tourism industry); and, The School of Health Sciences (offers highly skilled training in the areas of nursing and assistant pharmacist. It prepares professionals for general and specialized nursing care and assistant pharmacists). Their training offered includes the formation of 1st cycle (Graduate), 2nd cycle (Master), postgraduate and specialization courses, and a professional higher technical course (CTeSP) that gives a superior professional technician diploma. It is a comprehensive and multidisciplinary offering with courses in multiple areas of knowledge.

In addition to the training offer, GPI develops activities in the fields of research, of the transfer and valorisation of scientific and technological knowledge, of the provision of services to the community, of support for development and cooperation in extension areas of education, culture and technical.

The context of GPI is characterized by a region in the interior of Portugal, typically deserted, not only in terms of population, but also in terms of business. The statistics have a business density of 2.4 (n. \( \text{º}/\text{km}^2 \)) and a new business creation rate of 10%. Comparing with the national average of 107.1 (n. \( \text{º}/\text{km}^2 \)) or even the Central region, 8.9 (n. \( \text{º}/\text{km}^2 \)), it is notoriously a territory with a low number of companies, located in a region, also itself with a low business density [16]. Despite being in a low-density territory with a business environment composed of SME, with a low dynamism and innovation [17], GPI plays a decisive role in the fight against the interiority and desertification of the interior.

For several years, GPI and other institutions, in similar circumstances, struggle against this process of depopulation, but undoubtedly contributing to the region's growth and development [18]. The social and economic impact of GPI in the region is felt in Guarda district in two cities (Guarda and Seia), using the American Council of Education (ACE) model, shows an economic impact with a total value between 16.7 million euros and 28,3 million euros, by a multiplier of 1.0 and 1.7 respectively. This represents a considerable economic boost for the region, corresponding to 1.1% and 1.8% of GDP in the entire Guarda region [18].

It should be noted that every euro spent by the Portuguese government financing GPI, produces a multiplier effect, and generates between 1.4 and 2.4 euros of economic activity in the region [18]. In addition, the number of jobs associated with GPI function is about 1585 jobs, representing 3% of the region's employment rate and 2.6% of the region's active population.

This context allows us to conclude on the importance of the Institute as an engine of the dynamism and economic development of the region where it is inserted, and makes pertinent its self-analysis so that, as an entity for the promotion of entrepreneurship and innovation, reflects on its own ability to promote a culture that suggests to the outside these areas of development and economic and social growth.
2.2 Data collection

The objectives of this study are to perform the self-diagnosis of an HEI and observe and reflect on the level of entrepreneurship development in teaching and learning, to support innovation and entrepreneurship in GPI (Portugal). The HEInnovate platform was used as an experimental tool to evaluate and understand how GPI develops its teaching and learning activities in order to support innovation and entrepreneurship. The HEInnovate self-assessment tool was applied to the main organizational centres of the institution concerned, to the "Entrepreneurial Teaching and Learning " dimension.

In the questionnaire survey developed by HEInnovate, as already mentioned in the previous section this dimension is composed of five statements. Statements have been designed so that individuals can rate them on scale of 'not applicable' (n/a) to 5, according to how much they agree or disagree with the statement in relation to their institution. On the scale, 1 represents the lowest and 5 the highest score.

As part of a group, the self-assessment has a group function where individuals can be invited by an assigned group administrator to complete the tool for the purposes of internal comparison.

The application of the survey by questionnaire, sent by e-mail, involved the Presidency of Guarda Polytechnic Institute (Presidency), the directions of the four Organizational Units (School directions - Higher School of Technology and Management, Higher School of Education, Communication and Sports, Higher School of Health and Higher School of Tourism and Hospitality), and the Coordinators of the eleven Technical-Scientific Units (Department coordination), which make up a total of 18 respondents.

The data collection period was between October 26 and November 12, 2018. The response rate was 83.3%, which corresponds to a total of 15 questionnaires completed.

3 RESULTS

As we may observe in Figure 1 the overall score of the items, in average terms, reaches or exceeds the intermediate point of the scale (3 values), being between 3 and 3.5 values. As regards the scores given by the different groups, in average terms, it is verified that the item "The HEI provides diverse formal learning opportunities to develop entrepreneurial mindsets and skills", which has the highest scores.

![Figure 1 – Entrepreneurial teaching and learning results](image-url)
Analysing the results by group, we observed that the Presidency rank on average with higher scores (3.90), followed by Department Coordination and School Directions with an average value of 3.38 and 2.67, respectively.

Given the results obtained, it is important to observe the activities and actions effectively implemented in GPI in the scope of the entrepreneurial teaching and learning for each item.

1 The HEI provides diverse formal learning opportunities to develop entrepreneurial mindsets and skills. This question obtained the highest classification in the self-assessment (3.53).

The development of entrepreneurial teaching and learning across the institution will require a transformational change that promotes new pedagogies, student-centred and practice-based learning as well as new forms of learning outcome assessments. Such an HEI should be encouraging innovation and diversity in its approach to teaching and learning across all departments as well as developing entrepreneurial mindsets and skills across all programmes.

In the last decade, in GPI, approaches to teaching are expanding due to the gradual inclusion of entrepreneurship as an essential transversal competence resulting from learning in higher education, and the introduction of several opportunities for the development of technical skills in teaching internal and outside the formal curriculum.

When analysing the content of "subject description" document, used to define teaching methods, it turns out that teaching is geared more to the transfer of knowledge (lectures and frontal teaching, student-centred learning, tutoring - one-to-one/in small groups) than to transferable skills that also allow the application of knowledge in unknown contexts.

However, in addition to the commonly used teaching method, there are other experimental forms of learning, such as problem solving, practice-based learning like the use of case studies and simulation. Also, business visits (visits to companies) are organized regularly, and it is usual to invite businessmen as guest speakers in class. It is verified that the courses of the various organic units of Polytechnic report a mixture of teaching methods to be used in education activities.

In relation to digital learning environments these seem to be more practiced in the areas of engineering and social sciences. In support the institution's pedagogy, some disciplines used specific software, for example, PRIMAVERA Software (an accounting information system) or in areas of engineering and industrial design it exists FabLab Guarda in GPI that offer support in digital 3D modelling and 3D printing to promote innovation and to create prototypes.

GPI engage in 2003 in an entrepreneurship promotion project that analysed the academia and proposed an entrepreneurship contest associated with an education methodology that included an curricula and training programme for teachers. In doing so, not only started to promote entrepreneurship activities within students and teachers but also to change the mindset. In doing so, GPI initiated a process if including in the course's curricula, disciplines and entrepreneurship contends. Nowadays, almost every course has an entrepreneurship discipline and every course has entrepreneurship contend in their curricula. The transversal events existing in GPI, in this area, always promotes the engagement of students with business and new methods of teaching are being introduce in the classroom, like games and simulation.

2 The HEI provides diverse informal learning opportunities and experiences to stimulate the development of entrepreneurial mindsets and skills, obtain a 3.43 score.

Ideally, Extra-curricular learning opportunities are an important complementary part of entrepreneurship teaching and learning provision. An innovative HEI should offer a range of informal learning opportunities to students to inspire individuals to act entrepreneurially.

In fact, GPI deliver entrepreneurship education throughout the curricula, either through entrepreneurship courses or by embedding entrepreneurship within other subject areas. Entrepreneurship education is also delivered through extra-curricular training, learning opportunities such as business competitions, business simulations and providing other opportunities to learn from experience.

In terms of digital teaching and learning, the Institution presents a multi-faceted use of digital technologies. For example, several Massive Open Online Course (MOOC) were developed in partnership with other HEI in the following areas, communication, industrial property, organizational culture, marketing, business plan, financial management, marketing and financing instruments. The purpose is to deliver educational content to broad audiences via
online platforms and to innovate educational content. Accordingly, the innovative educational content is improved with implementation of new teaching methodologies as design thinking, mind mapping, problem-based learning.

Sometimes, organising interdisciplinary education activities is challenging because of conflicting learning outcome requirements, incompatible time schedules, and lack of institutional support and to overcome these barriers takes time. Therefore, the short-term solution is to organize the activities of interdisciplinary education outside the curricula.

The GPI Policasulos is a space for co-work to incubate business ideas and accelerate business plans of students, teachers and other IPG collaborators supported by a team of teachers able to mentor and coach the entrepreneur’s teams. This permit students teams to develop their business plan and projects before or after the entrepreneurship regional and national contest that IPG implement very year. The activities of this contest have recognition in the supplement to the student's diploma.

3 The HEI validates entrepreneurial learning outcomes which drives the design and execution of the entrepreneurial curriculum, obtain a 3.14 score.

An HEI that values entrepreneurial learning commits to regular review, validation, and the updating of course content and learning outcomes across all study programmes. The skills and competences gained from an entrepreneurial learning experience are essential for both graduate and entrepreneurs graduates entering the job market.

Usually, formal evaluation of entrepreneurship education activities is mostly an obligatory procedure. The focus is on competence development of participants and none on measuring the motivation to start-up a business.

When entrepreneurship is as an official part of an academic study programme/curriculum it may require a new approach to the assessment of learning outcomes. In fact, learning objectives, teaching methods and students learning outcomes will therefore need to be defined and codified in the HEI curriculum

In a recent study develop on the Impact’s perception of Entrepreneurship competences acquisition of the entrepreneurship education model of the Polytechnic Institutions in Portugal that GPI follows and implement, its possible to observe that in terms of the perception of the students who participated in it and even did not constitute a business company, is very positive. The majority of them consider the project an added value to their learning, which both personally and professionally have allowed them to increase skills that they consider important and of significance and the results achieved support the development of economic, social and personal skills [19].

4 The HEI co-designs and delivers the curriculum with external stakeholders obtain a 3.27 score.

In entrepreneurial teaching and learning, external stakeholders are an important source of expertise. Regular engagement with external stakeholders encourages long-term collaborative relationships that can provide useful inputs to understanding future skills needs as well.

In some courses, such as engineering and hospitality, disciplines are taught jointly by academics and professionals. This practice is a learning experience for teachers, gaining practical insight into entrepreneurial practice, and professionals benefit from academic reflection on their practices, making contacts with students as future professionals to recruit.

For example, in GPI facilities, it is installed the “Business Angels Club of Guarda” named - Angels Altitude - which had the support and participation of the institution in its creation.

5 Results of entrepreneurship research are integrated into the entrepreneurial education offer. This area obtained the lowest self-assessment (3.00).

For a curriculum to stay up-to-date and relevant, the entrepreneurial education offer needs to be continuously reviewed and updated. Therefore, an HEI should integrate the results of entrepreneurship research into its teaching.

In this area, although there is individual teacher research, HEI needs to adapt its organizational approaches and better integrate research activities, teaching methods and external involvement practices to reach its full potential. It is verified that GIP itself scores this area as the one that should be improved.
4 CONCLUSIONS

For a long time, education institutions have been preparing students for a working life in established organisations, which has left no space in the curriculum to develop initiative-taking and entrepreneurship. Education have an impact in changing attitudes and behaviour but it not the only factor. Teaching and learning are central areas for HEI to implement learning methods for students to acquire competences and skills. Building an entrepreneurial HEI is a constant journey, and elements, choices, engagement, and prioritisation are context-specific and unique for each HEI. Education activities that combine theory and practice are an ideal environment to nurture innovation and entrepreneurship.

In this case study we may observe an HEI that has a set of tools and methods implemented that have an important impact in students and teachers to change mindsets and influence attitudes and behaviour. Despite of the improvements and innovative method to be disseminated and put in practice it is possible to see that has disciplines, contends in the curriculums, infrastructures, trainings, contests and network activities of an entrepreneurship ecosystem already implemented and with important positive feedback from the academia.

Entrepreneurship validation is commonly assessed by business creation in a HEI, and in that countability IPG, as every HEI, has a short rate of business creation. This indicator, however, shouldn’t be the main evaluation measure as mindset, attitudes and behaviour patterns are long term and sustainable references of an effective entrepreneurship development. In this perspective, IPG evidences are stronger and there is a recognition of the work already done by the students and other partner of the entrepreneurship ecosystem.

REFERENCES


