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Global Considerations in Entrepreneurship Education and Training

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Chapter 11
Impact's Perception of Entrepreneurship Competences Acquisition in Polytechnic High Education Students

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ABSTRACT

The discussion about the evaluation of the teaching of entrepreneurship or training programmes from the perspective of a higher education institution is usually linked to the quantitative impact of entrepreneurship creation and often does not take into account the increase in skills and abilities, or the evolution towards a more entrepreneurial mind-set. In this chapter, the authors propose to analyse the learning perceptions of students who participated in the Poliempreende programme of Portuguese polytechnics. The goal is to see if students feel that their participation was profitable, not only for their personal development, but also for their professional work. Within a perspective of learning in an entrepreneurship, the transformation of entrepreneurs' experiences into knowledge can influence the relationship between their professional experience and the development of their wisdom about entrepreneurship. Thus, it is proposed to implement the evaluation of the impact of the perception of these students through the evaluation model of Kirkpatrick.

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INTRODUCTION

When we perform many of the daily tasks that make up our quotidian, we do not realize how everything happened until we reach a certain evolutionary point in our growth. The process that led us to follow another procedure after the first task, and that helps us to develop instant reactions to certain situations with which we are confronted originated in what is called learning (Skinner, 2005; Vygotsky, 2001).

Therefore, we can say that learning is something that modifies our behaviour at the cognitive, motor, sensory level, also integrating changes in our values and attitudes. We also know that most of the physical, emotional, psychosocial and cognitive development occurs during childhood and adolescence, projecting at this stage the basis for good self-esteem and future self-confidence (Ministério da Educação, 2016).

There are several currents that prospect different types and models of learning, without wanting to enter into deep subdivisions, we refer to the three broad categories that include these currents: (i) Behavioural theories (behaviourism) - explain learning directly related to events that are observable, avoid making references to concepts such as mind and will. Some of the authors who defend this theory, Pavlov, Thorndike, Watson and Skinner; (ii) Cognitive theories - consider that learning occurs through cognitive maps, by observation, imitation and sudden understanding. Some of the authors who adopt this perspective are Köhler, Tolman and Bandura; (iii) Developmental theories - proposed by authors such as Piaget, Vigostky or Bruner, seek to explain intelligence and knowledge as processes constructed because of the interaction of the subject with the environment that surrounds it. Learning arises through interaction.

Having the notion that there is no theory better than the other, or by contrast, some less relevant, as researchers we consider it important to be aware and recognize that our students may be exposed to different learning models and that they will influence and characterize them in the future.

We will start to understand what the main models of entrepreneurial learning are and identify the entrepreneurial competences developed within Poliempreende training programme. Then, after explaining the model of evaluation of Kirkpatrick will describe the empirical study implemented, analyse its results and discuss them, demonstrating that Poliempreende project and particularly its training programme develops entrepreneurial mind-sets used within the professional contexts of the participants and is well appreciated as a useful, interesting and consistent.

ENTREPRENEURIAL LEARNING MODELS

The learning of the most varied concepts is, therefore, conditioned to the teacher, subject of the action that, together with the environment, assume the preponderant role in the development not only of the student's competences, in terms of curricular contents, but more than that, in the development of proactive attitudes.

The learning of an entrepreneurial culture is, in this way, directly related to the subject, teacher, and to the object of the subject, the student, involving part of these theories and how they interact with the surrounding environment.

As we stated above, with students being receptive to the opportunities offered to them, it is fundamental to act by providing diversified learning possibilities, such as entrepreneurial learning.

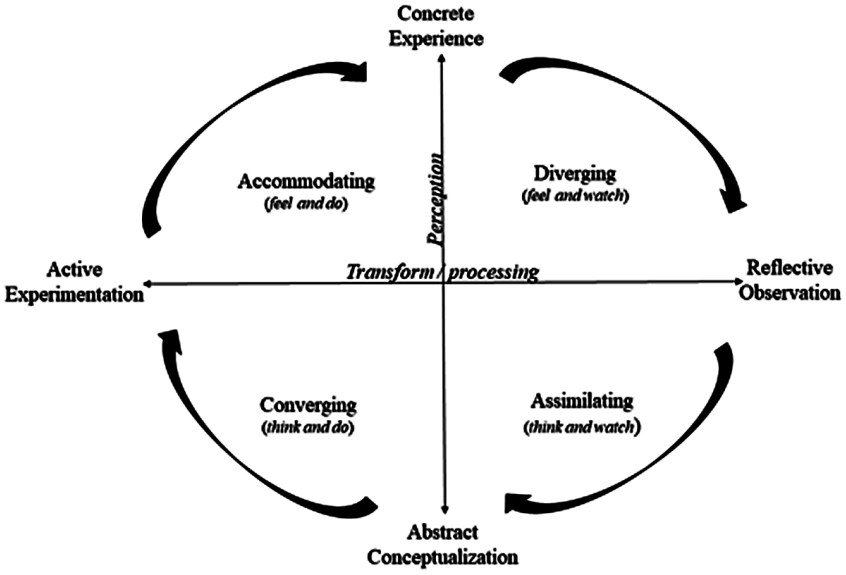
Entrepreneurial learning is a continuous social process of individual learning that emerges from what individuals learn for themselves and with others, developing their own knowledge and theories that will be applied, adapted, and learned by others, by the success provided (Rae, D., & Wang, C. L., 2015; Rae &

Carswell, 2000). This kind of entrepreneurial learning involves repetition and experimentation that leads to increased trust and knowledge (Minniti & Bygrave, 2001). This is still a process of co-participation that involves reflection, experience and action that are dependent on social, historical and cultural factors that condition it (Taylor & Thorpe, 2004), a dynamic process of consciousness, reflection, association and application that involves the transformation of experience and knowledge into functional learning (Cope, 2011; 2005; Cope, J. & Watts, G., 2000). Politis (2005) sums up the concept by stating that it is an ongoing process of facilitating the development of knowledge that is necessary for the effective creation and management of businesses and new businesses. From this, we can conclude that entrepreneurial learning is the process by which individuals acquire, associate and organise knowledge, conditioned by pre-existing mental structures, derived from educational, social and cultural influences (Minniti & Bygrave, 2001; Corbett, 2005; Harrison & Leitch, 2005).

Entrepreneurial learning has different perspectives: experiential, cognitive and networking (Man, 2006). The experiential approach advocated by Kolb (2014, 1984) suggests that learning is a process by which concepts arise from the experience and continuous reflection of the entrepreneur, as it can be seen in figure 1 below. The cognitive approach (Man, 2006) considers that learning is the mental process of acquisition, storage and use of entrepreneurial knowledge in the long run which is in turn affected by emotional, motivational, attitude and personality factors. The networking approach (Man, 2006), states that entrepreneurial knowledge is acquired through the networks of relationships (clients, suppliers, banks, high education institutions, professionals, relatives, friends and mentors).

Learning, as presented by Gherardi and Nicolini (1998), stems from the participation of individuals in social activities, since knowledge is produced in conjunction with the situations (time and place) in which activities are carried out. Therefore, entrepreneurs learn through direct experience, practices, successes and failures, and relationships with others (Rae & Wang, 2015; Rae & Carswell, 2000). In this way, learning is driven by practical needs, with the positive or negative experiences of the past (Man, 2006).

Figure 1. The Kolb experiential learning cycle
Source: Adapted from Kolb and Kolb (2008)



Therefore, there are some models of entrepreneurial learning that we will try to summarize and present and which systematize these reflections of learning. In figure 2, Rae (2004) presents an entrepreneurial learning model in which the individual is integrated into his social context and encompasses three dimensions: personal and social formation; contextual learning; and negotiated entrepreneurship.

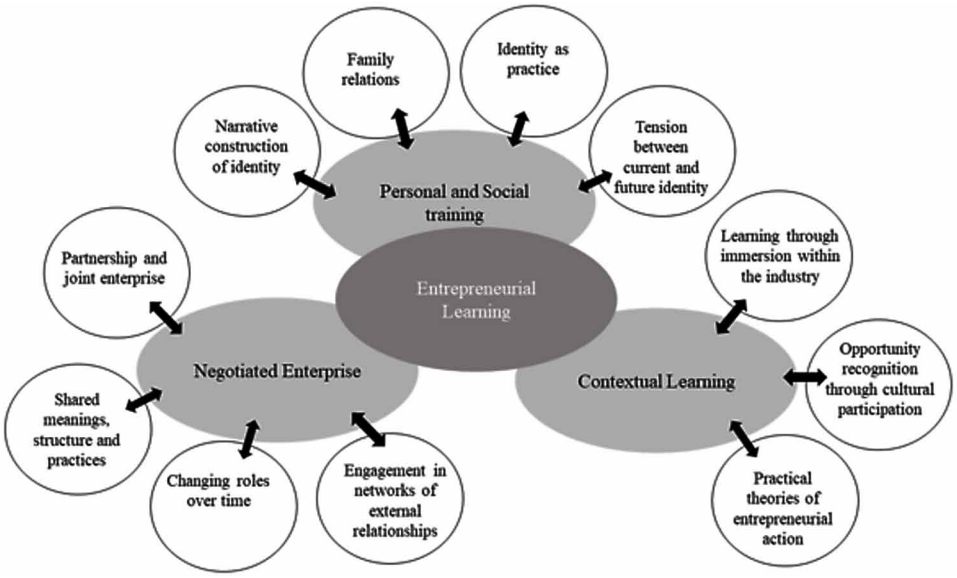
According to this author, entrepreneurial learning is influenced by his personal life and family experiences, by education, professional career and social relations. In this way, the components of personal and social formation influence the learning capacity and the acquired knowledge.

Contextual learning occurs when individuals report and compare their experiences, creating and sharing, in a social and cultural context and in their relationship networks. Through these social relationships and different situations and contexts, individuals learn and develop opportunities of recognition skills.

These interactive exchanges of ideas and goals with other individuals are referred here as a negotiated enterprise, these exchanges are carried out within the business context with customers, suppliers, investors, employees or partners. This dimension is subdivided into four: shared meanings; structure and practices; changes of roles over time, and insertion in external relationship networks.

The Politis model (2005) emphasizes the process of transforming the experience into knowledge. The author defends that experience, particularly business experience, is important for entrepreneurship learning as knowledge flows from that experience and influences strategic choices. As shown in Figure 3, this model highlights the role of experience in the development of entrepreneurial knowledge, integrating theories of experiential learning (Kolb, 2014, 1984; March, 1991). It distinguishes the experience of an entrepreneur and the knowledge he/she acquires that develops a dynamic perspective of learning by focusing on the process between entrepreneurial experiences and the development of entrepreneurial knowledge and how these are continually transformed. That is, the focus of this model is placed in the process of transforming the experiences of the entrepreneurs.

Figure 2. Entrepreneurial learning model
Source: Adapted from Rae (2005)



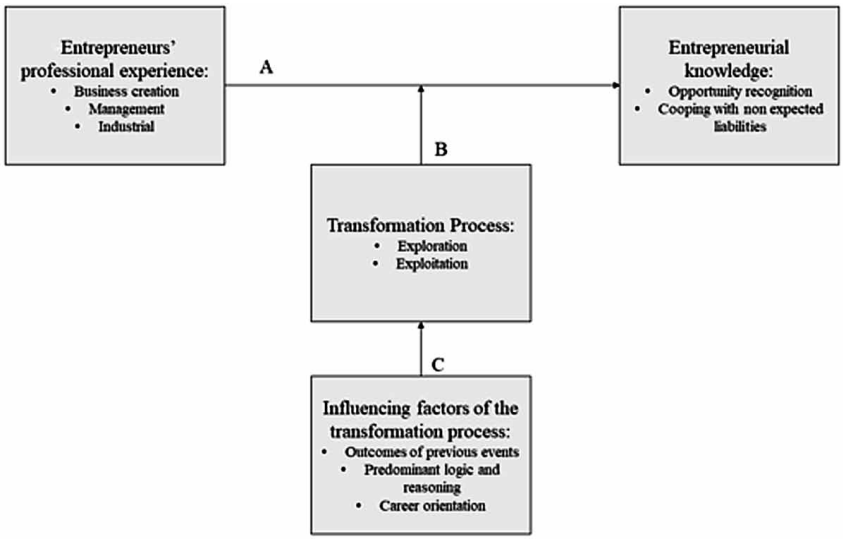
Entrepreneurial learning is often described as an ongoing process that facilitates the development of the knowledge needed to be effective in creating and managing new ventures. However, while there has been great effort to investigate the potential effects of learning from entrepreneurs' experiences, there has been very little effort to distinguish between "entrepreneurial experience" and "entrepreneurial knowledge", or what Reuber et al. (1990) refer to as "experimentally acquired knowledge." One way to distinguish these two concepts is to consider entrepreneurs' experiences as the direct observation of, or participation in, events associated with the creation of a new company, while the practical wisdom resulting from what the entrepreneur encountered represents the knowledge derived from this experience (Reuber et al., 1990). This line of reasoning may relate to Kolb (2014, 1984), which emphasizes the two basic dimensions of experiential learning - acquisition and transformation.

The previous figure illustrates that in addition to investigating the direct link between entrepreneurs' professional experiences, and the development of entrepreneurial knowledge (A), a better understanding is also needed of how entrepreneurs transform knowledge experience and its influence on the type of specific knowledge developed (B), along with the factors that influence the way of transforming an experience in knowledge (C).

According to Politis (2005) entrepreneurial knowledge is the recognition of the opportunity and the form of action in identifying it, overcoming obstacles and managing new businesses. Knowledge is structured by practice and observation and it results from the learning process over time, which has changes and consequent transitions in the behaviour of individuals.

Entrepreneurial learning has been presented as an experiential process where the personal experience of an entrepreneur is transformed into knowledge, which in turn can be used to guide the choice of new learning experiences. When investigating entrepreneurial learning, it is necessary to recognize that the career experiences of entrepreneurs do not lead directly to this entrepreneurial knowledge. Instead, gaining new experiences and developing new knowledge can best be described as a process where experiences are transformed into experiential knowledge (Kolb, 2014, 1984). Therefore, a simple perception of a past

Figure 3. Politis entrepreneurial learning model
Source: Adapted from Politis (2005)



experience is not enough for entrepreneurial learning to happen, but it requires something to be done with it. In the same way, transformation alone cannot represent learning, for there must be something to be transformed, some state or experience to be worked on. So, what still remains unanswered is the fundamental question of how entrepreneurs transform their experiences into entrepreneurial knowledge. The central idea of experiential learning is that learning requires a figurative understanding or representation of experience and then some transformation of that representation (Kolb, 2014, 1984).

However, Politis (2005) considers that this perspective of learning as a process of transformation of experiences, being continuously created and recreated, is not completely adequate to understand the complexity and the uncertainties of the entrepreneurs, considering that this type of process of learning does not necessarily follow this predetermined cyclical sequence, thus justifying the creation of its model.

Entrepreneurial learning is an experiential process in which an entrepreneur's career experience is transformed into knowledge by balancing the exploitation of what he already knows (i.e., old certainties in which entrepreneurs can choose actions that replicate their existing knowledge for the purpose of gaining advantages, reducing costs and maximizing benefits, including refinement, routine and implementation of knowledge, execution, production and choices), according to March (1991), and exploration (through which individuals learn from experiences of exploring new possibilities, discoveries and innovations that are different from previous ones) of new possibilities (Politis & Gabrielsson, 2005; Politis, 2005; Weick & Westley, 1996) where this knowledge can be used to guide the choices of new experiences. Neither of these two ways of transforming experience into knowledge is necessarily better than the other (March, 1991). Both are necessary to sustain learning, and there must be a balance between the two. For the above, Politis (2005) states that the transformation of experience into entrepreneurs' knowledge may moderate the relationship between their professional experience and the development of entrepreneurial knowledge, identifying three factors that may help to understand this transformation: (i) The results of previous entrepreneurial events, whether with successful or unsuccessful experiences; (ii) The dominant logic or rationality of an entrepreneur - there are two types of rationality in economic theories: causality and effectiveness. Causal reasoning uses analysis and estimation techniques to explore latent markets. It focuses on what should be done according to goals, means and expected results. Causality involves the creation of additional alternatives to achieve certain objectives (Sarasvathy, 2001). Effectiveness does not begin with predetermined goals, but follows those that emerge over time, according to the imagination and aspirations of the entrepreneur; (iii) The professional orientation of the entrepreneur, through four styles: linear, specialist, spiral and transitional. If some prefer to explore new activities, change of field, organization and work, others prefer routine and specialization (Politis, 2005).

DEVELOPMENT OF ENTREPRENEURIAL SKILLS OF THE POLIEMPREENDE PROJECT

Increasingly, training in general is oriented towards facilitating labour insertion far from being limited to having a focus on what is transmitted, concentrates on the knowledge, attitudes, skills and competences acquired and/or developed by the student during his/her training process. This new orientation is fundamental for being transformative in the new contexts of teaching and learning, and that is where the Poliempreende project is inserted. It's a project of the Polytechnic High Education system, in Portugal which, accordingly with its definition expressed in the Portuguese law[1], is a specific perspective of the High Education System, which is divided in two (university education and polytechnic education). The

Polytechnic High Education System aims to provide solid cultural and technical training at a higher level, develop the capacity for innovation and critical analysis and give scientific knowledge of theoretical and practical nature and its applications with a view to the exercise of professional activities. Polytechnic education differs from university education by the fact that it is more dedicated to practice while the second is very well-suited to the theory. While university education is guided by research and creation of knowledge, polytechnic education is guided by the application and development of knowledge and understanding and solution of concrete problems. In practice, nowadays, the difference between the two subsystems of higher education has diminished, since there is the same type of evaluation of the subsystems and both have approached their performance.

Poliempreende project, has the goal of promoting a solid entrepreneurial culture, and with a strong practical orientation, articulates training actions aimed at generating an initial business activity, with a double objective: promote the employability of its participants, and transfer the knowledge that is proper to the theme of entrepreneurship. This is an important task of the academy that feeds on the no less important research work.

It is assumed here that the entrepreneurial spirit is closely linked to the initiative and to the action, and therefore, within the training contents there is a prominence carried out by the development of competences that it is intended to be promoted. Allied to knowledge, it is necessary to know-how, because only then will we get professionals properly trained to intervene in the processes of development of entrepreneurship and innovation, so required socially. This spirit, other than the entrepreneurial spirit (consisting in identifying opportunities and gathering enough resources of a varied nature to turn them into a company) brings together a much broader range of positive attitudes. It assumes that you want to develop capacities for change, experiment with your own ideas and react with greater openness and flexibility. It presents a double facet; on the one hand it supposes to be able to launch new projects with autonomy, competence of risk taking, with responsibility, with intuition, with capacity of projection to the outside and with ability of reaction and problem solving. On the other hand, it also implies knowing how to carry out other projects with the same spirit of innovation, responsibility and autonomy.

There are three major groups of entrepreneurial skills that acquire a special role in Poliempreende:

1. **Economic Skills:** If the entrepreneur is the person who launches the decision to develop actions that seem difficult and that contain a certain risk, he/she needs to develop a clear vision of how much they need to transform ideas in companies, besides the basic knowledge of business management, needed to implement it. As managers they must be able to "do things", generate ideas, put them into action and motivate teams. Vision, leadership, team organization and efficient use of material resources can be a factor in their success. Articulating tools that stimulate the imagination, being aware of the need to strive to discover opportunities and turn them into profitable activities, is the key to entrepreneurial action and this, in turn, is fundamental to the economic growth of societies.

Entrepreneurship refers to the process of value creation that comes from the application of a series of resources that allow us to take advantage of an opportunity that goes from actions designed to identify opportunities, to take risks, to implement a new business and manage it (Hurtado, Cordon & Sennise, 2007), including all acts of innovation, renewal or organizational creation that may occur within or outside an existing organization (Sharma & Chrisman, 1999). Thus, the entrepreneur is considered an agent who discovers new opportunities through innovation and creativity (Schumpeter, 1934). We as-

sume innovation, competitive flexibility and job creation as key elements of economic development, so that entrepreneurship is an axis of growth and a solution to these three problems (Gómez et al., 2010).

2. **Social Skills:** If employment, in permanent transformation, stands out as the challenge of driving economic growth, our society needs models that promote and revitalize progress, job creation and innovative businesses. It is necessary to increase the indexes of employability to improve the quality of life of the population and a valid mechanism to achieve this is self-employment. In this sense, entrepreneurial initiatives play a very important role in today's society. It will not be surprising that in this perspective, many see entrepreneurship as a possible alternative that allows obtaining the achievement of all these goals.

But an entrepreneur who wishes to bring an ethical sense to his company must also commit himself to a moral code and a personal determination that will lead him to create a value that is beneficial to humanity. Assuming the foundation of an enterprise as an ethical activity will depend on the values of the entrepreneur, and therefore, the formation process must impel a certain consistent model with this business ethic (OCDE, 2015).

The educational practice of this project aims to transform society by fostering values, knowledge, attitudes, beliefs, etc., based on cultural principles oriented to an entrepreneurial spirit as a motor of community development. Generating an entrepreneurial culture based on the balance between economic growth, social justice and respect for nature (Cañadilla, 2005; Galindo, 2006), as the engine of a sustainable development.

3. **Personal Skills:** We assume education for action and that human activity must be creative. Encouraging the dynamism, guiding it to the search of the new, for the creation and increase of possibilities, is an objective that we propose with the Poliempreende project. Achieving it will have a direct impact on the potential of the student and through his/her daily work in the organizational environment and society in which he/she is inserted.

Taking into account the current global social and economic context, in constant mutation, we must empower our students with techniques and tools that allow them to face the pressures of these changes, at the speed and intensity they have. The rapid obsolescence of the information we work with and the validity of our knowledge requires learning that increases the ability to learn and change. Our model incorporates education and employability so that students can develop what they know in any situation they face (Irigoin & Vargas, 2002). Therefore, we must prepare him/her so that they can act and mobilize their knowledge.

Some of the important skills that the project works in, areas of personal development, have to do with motivations of achievement and affiliation, working on the belief of self-improvement and that effort and dedication make it possible to achieve goals, the idea that whoever wants to will be able to, the need to persist and meet commitments. Persuasion, the establishment of information-seeking networks, the planning and implementation of the actions defined to achieve the objectives, the need to plan the actions and audit their implementation are other competences that we consider important and that we seek to develop.

PERCEPTION OF THE IMPACT OF LEARNING: THE LEARNING EVALUATION MODEL OF DONALD KIRKPATRIK

The formative evaluation has undergone a profound evolution in the last decades, being no longer based on the proof of the effectiveness of a programme to socio-critical models (Simons, 1999), that view it as an exercise in holistic understanding (Stake, 2006; Parlett y Hamilton, 1977), or even as a political exercise (MacDonald, 1988).

There are many difficulties that we face when we are confronted with an adequate design of an evaluation programme of global character highlighting, beyond the faction of the design or the inadequate allocation of material, personnel or temporal resources, the scarce appraisement culture that we suffer. Design is the key to good assessment.

It is quite complicated to carry out evaluations on already developed processes for which no evaluation was foreseen, even more if the budget is scarce and if the evaluation of the effects of the impact of the training action (fundamentally of the competences that are intended to be promoted) requires that it be carried out differently in time [2] (Boqué & García, 2010).

There are few scientific references related to the evaluation of the transference of learning in training: Kirkpatrick (2000-2010); Holton, 1996; Holton, Bates & Ruona, 2000; Holton, Chen & Naquin, 2003; Holton, 2005; Moreno (2009), standing out, without no doubt, the Kirkpatrick model, for being the most used.

The Evaluation Model of Training Programmes that Kirkpatrick considers has ten factors in the planning and implementation of any training action: (1) Detection of needs - the training action should be adapted to the needs of potential students and all groups involved in the action (institution, organization, clients), that is, training functionality; (2) Definition of objectives; (3) Content definition - should be aligned according to the identified objectives and needs; (4) Selection of participants; (5) Work plan (action schedule); (6) Selection of the appropriate infrastructure for the contents and work plan; (7) Selection and hiring of teaching staff; (8) Selection and preparation of audio-visual materials; (9) Coordination of training.; (10) Assessment - This is where Kirkpatrick's Four-Level Model is structured.

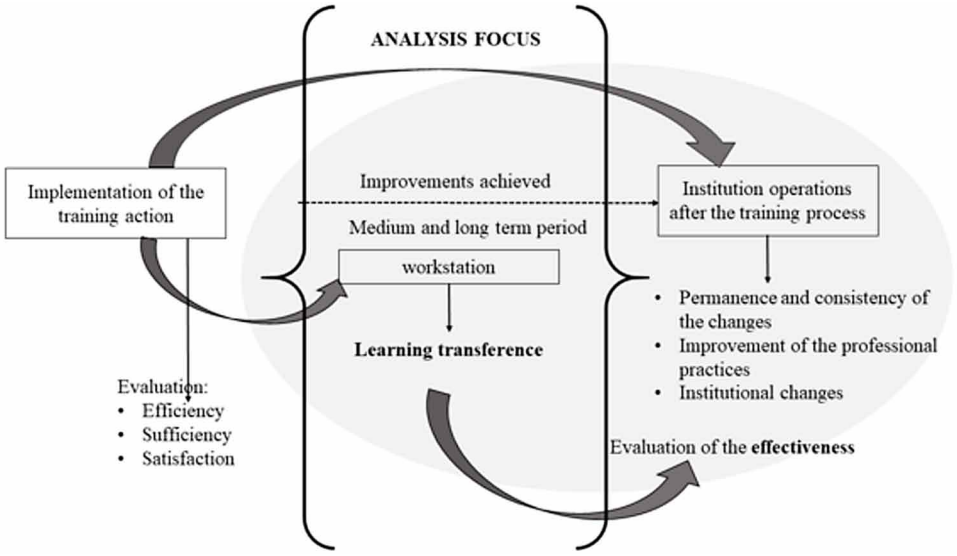
In 1959, Donald Kirkpatrick draws up the evaluation model of training actions by identifying four levels of assessment (see Figure 4): Reaction; Learning; Behaviours; and Results.

The author, at each level, proposes conditions and indicators that facilitate and structure the evaluation:

Level 1 – Reaction - Measures students' satisfaction with the training received. It suggests that this measurement should be done through a questionnaire that should contain questions that allow the opportunity for the respondent to express their personal opinion, make comments and suggestions. At the end of the training, questions should also be included about the motivation and interest of the participants of the course (questions about the programme related to the theme, with the trainer and the programme in general). The evaluation of this level serves mainly to underline the positive and negative aspects of the training, in order to improve future editions.

The evaluator gathers information on the opinions of the participants of the training regarding certain characteristics of the training course: objectives, content, utility, methods/strategies of orientation of the classes and/or tutoring by the teacher, suitability of the facilities, rhythm and clarity of the oral presentation, didactic material, etc. This level of evaluation does not, however, make it possible to determine whether the training action has been effective or not, hence its usefulness is limited.

Figure 4. Model of evaluation of training actions
Source: Adapted from Kirkpatrick (1999)



Level 2 –Learning - It measures the acquisition of knowledge, improvement of skills and change of attitudes and competences. The knowledge and skills must be measured as soon as the training ends or before and after the training action by the evidence of knowledge or through the use of other methods such as interviews, skill tests or even fieldwork, etc. Assessments at this level determine the extent to which the participants actually assimilated what was taught, allowing the study of the relationship between learning and some characteristics of the training action, such as course content, learning activities, course structure, materials and tools used, etc.

Level 3 - Behaviours (transference) - measures the degree to which students apply the knowledge learned in their work and consequently if there are changes in the delivery of services.

We need to consider whether these changes in service delivery may or may not be immediate, i.e., if the application of new requirements puts in for a certain period of time before an appropriate assessment can be made. The evaluation usually takes the form of interviews and/or questionnaires to trainees, in addition to observing the work performance by the hierarchical superior or through the evaluation of indicators that can be obtained automatically.

At this 3rd level of evaluation, we ask whether participants are applying what they have learned at their workplace, what elements they use the most and why or if there is any element of the course that is not used. This can be done by deciding whether to change the course in order to achieve better results or, if, on the contrary, there should be changes in the work context or if the requirements for access to the training activity should be changed.

Level 4 – Results - In this last level it is intended to evaluate the benefit produced by the training, that is, if the training had an impact. This impulse can be financial in nature or at the level of participant satisfaction and it is related to the results or the corporate image of an organization.

The purpose of this level of evaluation is to measure whether the objectives planned in the training action are transferred to the organization in an effective and efficient way, through indicators related to the increase of the salary, growth of productivity, greater benefits, reduction of costs and time, stability in the workplace and improved quality, for example.

In general, we can say that the first levels of the model apply directly to the course and are easier to evaluate. The other two levels require more careful design in the development of evaluation tools because some information will be difficult to obtain in a clear and concise manner.

The main advantage of this model is its practical viability, due to the excellent structuring of the model (detailed actions that indicate how to do it). It is based on the definitive implementation of the evaluation of training programmes as a tool for change and improvement of quality.

According to a 2002 study conducted by the American Society for Training and Development, 78% of organizations assess training actions through student satisfaction, level 1 - reaction. However, only 32% evaluated level 2 - learning, 9% level 3 - behaviour and 6% rated level 4 - results, from the Kirkpatrick model. This shows that, although levels 3 and 4 are presented, due to their characteristics, the most interesting ones for the evaluation of any training action are those that are less used by different organizations.

The unidimensional of the Kirkpatrick model is a feature that raises some criticism because, if the evaluation of results is limited to the form and dimension of how they translate into economic terms, it will leave out equally important aspects that cannot be defined in these terms. Another disadvantage is that the feedback from the training action is not immediate or direct. Usually the contents, skills and attitudes acquired during the training do not apply immediately and in the work context, and during the period that a large part of the information received can be lost.

In this sense, the Kirkpatrick model may not be the only solution for the evaluation of training, but clearly it provides a great contribution to the achievement of this important task, for the relevant information it can provide.

AN EMPIRICAL STUDY ON LEARNING PERCEPTIONS

The component, that we propose to evaluate, is the perception of the impact of the acquisition of competences in entrepreneurship in the students of Polytechnic Superior Education which has the following objectives: (i) Evaluate the perception of the impact of the training programme on entrepreneurship of the polytechnic network in students, particularly those who did not create a company, given that in those who did, i.e., who created their company, the impact of the training translates and is mirrored in the foundation of the company itself; (ii) Know the value that the students attribute to what they do and about the utility or possible application in their current professional activity, that is, the evaluation of the impact of the training received in terms of knowledge transference and the consequent effect on the job they occupy.

Study Design

In order to develop the study and based on the theoretical research carried out, we designed our investigation based on some basic ideas: (i) We assume training not only as an instrument for acquiring knowledge but also, as an enabler and facilitator of personal change (skills, abilities and attitudes) as the

basis of a strategy of cultural change aimed at generating a solid corporate and professional culture in the respective and different regions of influence[3] (Gairín, 2010); (ii) We understand as being of interest, from the student's perception, the fact that the training is useful for the professional performance; (iii) We assume the need to have a minimum period of time from the end of training to the time of evaluation in order to know the practical effects of this training (Gairín, 2010; Pineda, 2000). Thus, the trainings that took place in academic years between 2008 and 2013 were chosen because it was assumed that this was the period of consolidation of the Poliempreende project, as a national network for the promotion of entrepreneurship; (iv) We assume that there are different theoretical models for the evaluation of the transference of knowledge, but we understand that the model proposed by Kirkpatrick is the one that best suits the objectives of our investigation (Kirkpatrick, 2009; 1999).

Measuring Instruments

It will be at the third level of the Kirkpatrick model that we will focus on our study because it is this one that allows evaluating the real changes that, after some time, can be generated in terms of abilities and mentalities and how they are applied in our daily life.

Given that the impact is defined based on a set of indicators, for the specific case of our study we propose the following: Added value - Transference of knowledge acquired in training. This implies the increase of knowledge, skills, abilities, change of attitudes that a subject experiences after having participated in a training programme; Satisfaction - Here understood as the adequacy of expectations (desires, needs based on experiences, regulations, etc.) to the final perception of the training about what was learned. The satisfaction can be assumed as a quality index, a measurement of the correct functioning of the course and/or an indicator of results; Improvement of the professional status - Here we refer to the profitability that was possible to withdraw from the training course. According to the 4th level of Kirkpatrick's model, the acquisition of knowledge, skills and abilities on a given topic should have an impact on the employability of the participant in the training.

These indicators can also be subdivided into the following contents and criteria, focused on analysing the potential changes generated by the training: (i) Sensations experienced during the course, in general terms, and linked to the training action itself (for example: whether they liked it or not, whether they were treated well, whether they had a good environment, companionship); (ii) Believe you have learned or measure the awareness of learning. This is to analyse if the participant remembers the work/contents of the course. Qualitative and/or quantitative changes (knowledge, skills, competences, attitudes, etc.) that they perceived to have acquired in the training received; (iii) Appreciation of the degree of utility they attribute to knowledge. If they are "served" or "do not use" them; (iv) Perception of the degree of application of the contents in their current professional practice; (v) Modifications that they think could have caused and that the acquisition of knowledge made have provided them. Advantages found in the application in their current job; (vi) Influence on the perception that the company has in the way of working of these participants, if they contribute to value the work that they do by their hierarchical superiors and/or employer organization, in general.

From the above, there are some clear questions to ask:

- Questions related to the conceptualization of teaching and contents of the Poliempreende project: In what way does the participant, in training, value teaching: criteria (degree of satisfaction or expectations fulfilled from the point of view of the student regarding the didactics of the action - thematic, contents, teacher, resources, relation with the group); Analysis of programme content: type of training (theoretical or practical), appropriateness (of interest, with social relevance or not), content (whether or not they correspond to their name, related to the business world and the creation of businesses, skills developed), applicable to other professional contexts or not, whether or not the training is useful (if you can apply what you have learned, if you have a practical orientation, what tools and methodologies can be used).
- Issues related to the generation of change/personal development: added value and professional improvement that the training provided (predisposition for change, to apply what was learned and believe in this possibility of application).
- Questions related to the valuation of experience, that is, satisfaction.

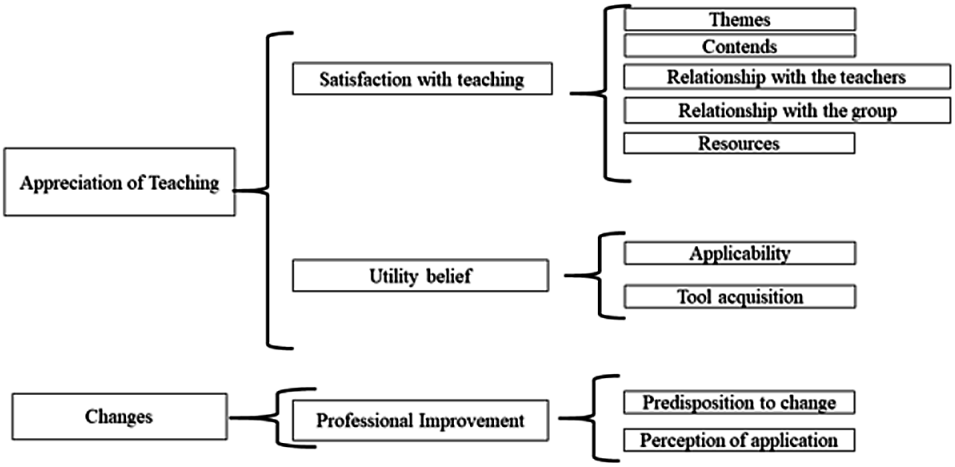
All of these questions that were originated are expressed in the developed questionnaire (see Annex 1 - Questionnaire), as Figure 5 shows.

The Questionnaire

The questionnaire, elaborated according to the above, was structured in six parts (see Annex 1 - Questionnaire):

Part 1: Collection of sociodemographic data in order to stratify the studied population based on sociodemographic factors, age, gender, acquired training, year in which they participated in the Poliempreende, position and activity that they currently carry out and the size of the company according to the number of employees.

Figure 5. Basic schematic of the Learning Perception questionnaire



Part 2: Here is a Likert scale[4] (from "0" – you are totally at odds to "5" – you are in complete agreement) with a total of 27 items. It is intended to know the usefulness that the participants felt with the participation in the training, as much in the theoretical and practical contents as in the level of the teaching methodologies. Some questions are also included that allow measuring the satisfaction that the training may have provided, as well as the perception of professional improvement as a result of the contents worked out in the training programme.

This part is understood, by us, as the most important, given the quality and quantity of information that can provide regarding the structuring of the course (content, methods, ways of transferring technical knowledge and quality of teachers' attention, organization and logistics, infrastructures) and its suitability for the purposes for which it is intended (development of knowledge and skills for entrepreneurship in all its forms).

Part 3: It is intended here to obtain an overall appreciation of the training, through a semantic differential[5] (SD) (extracted from McCabe, 1980, in Mayor Ruiz, 1996) where a series of adjectives are related on a gradual scale (from 0 to 5, being "0" - useful and "5" - useless) in which the respondent should position himself. As a result of this analysis we obtain the overall valuation profile of the PIN / Poliempreende training.

The semantic differential is an advisable technique to measure successes that are not internalized or difficult to express quantitatively, that allows analysing what people think of a particular event (Urbán, 1980). Therefore, it is intended to measure the connotative meaning of words, adjectives that qualify different aspects related to the training from the subjective manifestations of the participants through a controlled bipolar scale that operates around 3 values: a positive (+), a negative (-) and a neutral end (Muñoz, 2010).

We propose a list of 25 adjectives, in pairs, in a bipolar way, in order to relate them to the contents of the Poliempreende. This instrument of psychological evaluation defends a concept that acquires meaning when an adjective can provoke the response associated with the object that it represents (course content). It is a reaction to the symbolized object (Poliempreende training).

The adjectives were framed in three dimensions: (i) Valuation or evaluation of the concept - evaluates attitudinally the concept (good - bad); (ii) Greater or lower power - evaluates the force that a concept has on the evaluated individual (profound - superficial); (iii) Greater or less activity - evaluates the activity or agility (passive - active).

The meaning of each and every one of the concepts is defined based on its value, evaluation, power and activity, configuring the limits of the semantic space (Odetti, et al., 2009).

The tool facilitates the achievement of an objective and quantitative measure of the psychological meaning that the Poliempreende training had on the participating students, through the description of the semantic profile of each person (Muñoz, 2010).

Parts 4 and 5 - Composed of open questions regarding content that the participants consider to be lacking and should be included in the training and those who feel they are not suitable and should be withdrawn. It is intended that the respondent should justify their responses, so that these opinions can be used in a perspective of improving future training.

Part 6 - It allows the participant freely, through an open question, to make observations on any aspect that he/she considers relevant and that is not included in the presented questions.

The questionnaire ends with Part 7 where the respondent is expected to make an overall evaluation of the Poliempreende training through a Likert scale with 6 items ("5" - very high; "0" - very low).

Sample Definition and Questionnaire Release

Knowing that, according to Kirkpatrick's model, we should have a period of time between the time the training was carried out and the moment when we should execute its evaluation, and also taking into account the fifteen editions of the Poliempreende project, we defined as the period of analysis the 6th edition (2008/09 school year) for being the first edition with the polytechnic network of national scope as it is characterized today, and the 10th edition (school year 2012/13) for having already been done for about 5 years and thus, have allowed, beyond the assimilation of contents, the development of skills and abilities.

As a result, we have approximately 65 students participating in the Poliempreende training, with business creation projects being carried out in the regional competition in the different polytechnics, of which a sample of 41 students is being contacted (available and with current contacts), or in other words, 63% of the identified population.

The process of launching the questionnaire was done through telephone contact and the request to fill in at the moment by telephone or afterwards, on online. This process gave rise to about 30% of responses, related to the population identified.

ANALYSIS AND DISCUSSION OF RESULTS

The data obtained were initially analysed and all the answers gathered were accepted, except for a response that proved to be contradictory and was considered dissonant, and therefore, not included in our analysis.

The questionnaire released was highly reliable, with a Cronbach Alpha of 0.898 and the data obtained were statistically treated using the SPPS 20 software, where a descriptive analysis was carried out in order to obtain the information we proposed. We also made a cross-over of variables that given the great homogeneity of the results had no expression.

Part 1: Characterization of the Sample

Of the total number of respondents, the majority belonged to the female sex (65.4%), with 11.5% being 30 years of age and the remaining ones were between the ages of 20 and 50.

Regarding the date of participation, the majority of respondents participated in Poliempreende between 2009 and 2013 (80.7%), that is, responses were obtained from participants who had benefited from the Poliempreende training programme for at least 5 years.

It was observed that a higher percentage of respondents prevailed with a degree in business management (19.2%), nursing (15.4%) and mechanical engineering (15.4%), with the remaining respondents presenting a great diversity of areas of training and, therefore, were impossible to add.

A significant number of respondents are employed in the Service area (42.3%) and hold positions of intermediate responsibility (57.6%). The number of employers has small or medium-sized enterprises (53.9%), but 30.8% of the respondents work in large companies.

Part 2: Assessment and Satisfaction With the Poliempreende Training

The respondents considered the Poliempreende project to be very interesting (26.9% - quite in agreement, 65.4% totally in agreement), whose planned activities were fulfilled (34.6% - fairly agreed, 46.2% fully agreed) and adequate to the objectives (34.6% - quite agree, 57.7% fully agree).

The facilities were considered adequate for the development of the activities (30.8% - quite agree, 50% totally agree) and the rooms used were properly equipped (42.3% - quite agree, 50% totally agree).

Respondents pointed out that the environment that was developed for the training activities was very pleasant (46.2% - quite in agreement, 50% totally in agreement) and that the tutors/trainers had good technical capacity (30.8% - quite in agreement, 53.8% - totally in agreement). They also affirmed that the working group was motivated (34.6% - quite agree, 50% - totally agree) and that the materials available for the development of the activities were adequate (50% - quite agree; 26.9% - fully agreed).

Regarding the tutors/trainers, they considered that they fostered teamwork and participation in the activities (34.6% - quite agree, 50% - totally agree) and that there was sufficient support during the activities (38.5% - quite agree, 38.5% - totally agree), recognizing the technical capacity of trainers (11.5% agreement, 30.8% - quite agree, and 53.8% - fully agree).

In what concerns the content of the training, we observed that the respondents considered that the learning was very practical (34.6% - quite in agreement, 46.2% - totally in agreement) and that the articulation between theory and practice was balanced (50% - quite agree, 30.8% - fully agree).

The majority of respondents also stated that the content developed was adequate (26.9% - according to 42.3% - quite agreeable, 26.9% - totally in agreement), although more than 50% of the respondents had considered that the duration of the activities was insufficient (30.8% - according, 23.1% - quite agree).

According to the answers obtained, the Poliempreende experience obliged the participants to reflect on what they do (46.2% - quite agree, 34.6% totally agree) and the tutor/trainer allowed them to understand how to apply what they learned (50% - quite agree, 23.1% fully agree). They considered that the contents learned have been useful in their professional life (42.3% - quite agree; 26.9% fully agree) and have applied new skills and abilities in their work (38.5% - quite agree, 30.8% fully agree). More importantly, the participants in the Poliempreende experiment stated that when they have a problem in applying what they learned in Poliempreende, they consult someone who was with them in the project (30.8% - according to 15.4% agreement, 19.2% fully agreed).

Although 38.5% say that their work is unknown about their participation in the Poliempreende, 50% consider that they can apply, in their workplace, the contents acquired during the participation in the programme, whose acquired skills and abilities feel that they are able to apply in their job (42.3% - according, 19.2% - quite agree, 23.1% totally agree), 80.8% state that they really apply them. However, 53.8% feel that their workload prevents them from implementing what they have learned (26.9% - quite agree, 26.9% fully agree).

It should also be noted that some 46.1% of the respondents stated that their superiors do not show interest in knowing how they can improve their work from the Poliempreende experience and that 61.5% consider that their institution appreciates the changes that they want to apply as a result of their participation in Poliempreende.

Part 3: Overall Value of Poliempreende Training

In order to observe the overall valuation profile of the Poliempreende training, respondents were asked to position themselves on the proposed semantic differential scale.

Taking into account the results expressed in the table below we can observe that the opinion of the respondents is extremely favourable to training. This technique allowed to obtain an objective meaning of Poliempreende for each respondent.

By reading the previous table and according to the three dimensions of defined adjectives, we can observe that the respondents considered that:

Table 1. Adjectives for the Poliempreende project

Adjectives	Classification %						Results
	0	1	2	3	4	5	
Useful-useless	46,2	38,5	3,8		11,5		Useful
Good-bad	3,8	3,8	3,8	3,8	30,8	57,7	Good
Easy-difficult	7,7	3,8	23,1	34,6	30,8		Not easy
Pleasant- unbearable	44	32	8	8	8		Pleasant
Fragmented - Coherent	3,8	3,8	23,1	42,3	26,9		Fairly Coherent
Satisfactory - unsatisfactory	46,2	26,9	15,4	3,8	7,7		Satisfactory
Confused -clear	3,8			15,4	38,5	42,3	Clear
No value - valid		3,8	3,8		30,8	61,5	Valid
Very important - not necessary	38,5	46,2	11,5		3,8		Very important
Narrow- broad		3,8	3,8	30,8	34,6	26,9	Broad
Consistent- inconsistent	36	44	16	4			Consistent
Optimistic - pessimistic	34,6	46,2	15,4	3,8			Optimistic
False-true		4	4		36	56	True
Relevant -irrelevant	42,3	42,3	3,8		11,5		Relevant
Weak-strong	3,8			19,2	42,3	34,6	Strong
Profound -superficial	16	44	44	12	8	4	Profound
Passive -active	3,8			19,2	42,3	34,6	Active
Short - lengthy	3,8		15,4	42,3	26,9	11,5	Average duration
Informative – not informative	34,6	42,3	15,4		3,8	3,8	Informative
Practical- theoretical	15,4	34,6	19,2	23,1	3,8	3,8	Practical and theoretical
Uninteresting - interesting	3,8	7,7			50	38,5	Interesting
Fast -slow	15,4	15,4	26,9	23,1	19,2		Average speed
Formal - informal	11,5	19,2	30,8	19,2	15,4	3,8	Slightly informal
Imaginative - conventional	19,2	30,8	19,2	11,5	15,4	3,8	Imaginative
Not stimulating- stimulating	3,8			19,2	30,8	46,2	Stimulating

- **The Poliempreende Training is:** Useful; good; it is not easy; pleasant; fairly coherent; satisfactory; clear; valid; very important - valued;
- **The Poliempreende Training is:** Broad; consistent; optimistic; true; relevant; strong; active; average duration; informative; practical and theoretical; interesting - great potential and profound;
- **The Poliempreende Training is:** Average speed; slightly informal; imaginative; stimulant - great agility and activity.

Part 4 and 5: Reflection on the Contents of the Poliempreende Training

Two questions were asked about what could be withdrawn from the training and what could be included that was not yet covered. The majority of respondents did not mention any subject that they considered relevant to remove from the training and those who answered the question about what they would add said that the training could have different categories according to their area of intervention (e.g. a social innovation area, new technologies, restoration) in order to fit more directly into the area of each proposed project.

Part 6: Comments on Poliempreende Training

In the open question, we noticed several comments concerning the need for the training to have more dissemination and the constitution of impartial juries.

Part 7: Overall Evaluation of the Poliempreende Training

Regarding the classification on a scale of 6 levels which the global opinion of the respondents of the Poliempreende training, very positive responses were obtained (7.7% - high, 46.2% - quite high, 42.3% - very high).

From the results found, we can affirm that the evaluation of the Poliempreende Project, in terms of the perception of the students who participated in it and who did not constitute a company, is very positive. Generally speaking, the great majority 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.

In general, we can also observe that although there are some issues to be improved in the learning process of Poliempreende, such as its duration, coverage in terms of business thematic (it was observed that some topics could be specified: social, technological, catering), it is very important the reflective analysis carried out by the interviewed students to state that they apply the knowledge learned in their professional life (even if they cannot do it more effectively due to the lack of time) and that their employers are available to listen to their proposals, although they are not interested in the way in which this suggestions originated, that is to say, whether or not it came about because of their participation in Poliempreende.

Therefore, it seems to us, that the results achieved are encouraging for the teams that implement the Poliempreende, and there is a process of improvement that should be supported by the management of the institutions to make this project more visible, with more student agglutination and with a longer period of time, perhaps more integrated during the school year teaching activity, crosswise to the courses.

The results achieved support the development, intended by the *Poliempreende*, of economic, social and personal skills.

CONCLUSION

The Poliempreende project seeks the development of entrepreneurial learning through the experimentation and development of a business plan integrating students in business contexts as close as possible to reality. In this way, it looks for, from the perspective of the learning referred to by Politis, that the students identify opportunities and forms of action, surpassing barriers for the accomplishment of their objectives. This missive, it seems to us, by the results obtained from the perception of the students interviewed in our study that was totally achieved, in particular because they can do so much in the aspect of their professional and personal performance.

As stated in the theoretical explanation, entrepreneurial learning (Politis, 2005) resides in the transformation of experience in knowledge, in which past experience, logic and rationality (causality and effectiveness) and their professional orientation. In this sense, the Poliempreende project allows different people to participate in it: (i) Development of logic and reasoning, through the exploration and research of knowledge, using analysis techniques, the definition of objectives and alternative solutions and the decision making that, based on students' ambition, leads them to the definition of business plans of greater or less success; (ii) Overcoming barriers and obstacles, dealing with success and failure, an experience that allows them a history and an ability to deal with the difficulties of running a business; (iii) The search for a definition of a way of working, with integration in multidisciplinary fields and teamwork that provides them with choices to guide their professional future, specializing or not, changing or not their thematic and technical orientation.

This range of skills development, technical and multidisciplinary, seems, by the results of our study, to be appreciated not only by students who participated and enjoyed the Poliempreende experience and by their employers.

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ENDNOTES

1 Decreto-Lei n.º 427-B/77 de 14 de outubro; Decreto-Lei n.º 513-T/79 de 26 de dezembro; Lei de Bases do Sistema Educativo in website of Federação Nacional dos Professores - https://www.fenprof.pt/?aba=27&cat=84&doc=1174&mid=115

2 We cannot evaluate the transference without waiting the necessary time that allows the students the opportunity to assimilate the knowledge, to develop the said skills and to put them into practice in their jobs. A period of time, which must be greater if in addition, we want to evaluate the impact of the application of the knowledge that has been able to provide in the organizations where they work. In our case, this impact may not be evaluated because it would require the collaboration of these organizations (where the students now work) to be able to deduce this improvement generated by the knowledge of the Poliempreende programme, and this in turn, would require that these organizations have measured the before and after of them benefiting from the training (OHCHR, 2010).

3 Each of the training centers of the Poliempreende project welcomes students from a particular district or region that we can assume as a potential area of influence.

4 The Likert scale is the most advisable for the measurement of specific attitudes or questions while the semantic differential allows to measure general attitudes (Odetti, Tiburzi, Mondino, & Güemes, 2009)

5 It is a technique created by Osgood et. al. (1957) to study attitudes through language. They differentiate two meanings by the words, the denotative, which the dictionary contains, and the connotative, the meaning that each person assigned to it. This connotative meaning is what we intend to evaluate.