Abstract

In the last decade there has been an increasing defense on the role of education in development of entrepreneurial skills, as these can and should be learned and developed very early. The appreciation of the role of education in development of entrepreneurial skills prints a new responsibility to educational institutions, particularly to higher education. It is precisely one example of entrepreneurial education in higher education that this paper presents. We give the example of one center of learning and development of children (Centro de Aprendizagem e Desenvolvimento da Infância – CeADIN) from one institution of higher education in Portugal involving in this process the students of teacher’s education courses. The project’s mission is the provision of a qualified service in education aimed at the school community in the area of influence of the institution. Its main objective is to offer a set of integrated services in development psycho-pedagogical skills to students who are doing their initial training as teachers while providing actions and interventions promoting psychosocial adjustment and academic success of children attending schools in Castelo Branco, Portugal.

Key Words: Entrepreneurial skills; teacher’s education; psycho-pedagogical intervention; CeADIN; case study.

1. Introduction

The Report to the European Commission on "Education and Training 2010" (EC, 2004) introduced the concept of key competences for learning throughout life, since these are essential in a Knowledge Society. In this new framework, the key competences shall be construed as a national policy reference for creating learning opportunities for all citizens throughout life in the contexts of education and training.
It is in this context that the concept of entrepreneurship is assumed nowadays as a transversal competence, essential for human, social and economic development. Education and training for entrepreneurship are integrated into the European Commission's strategy under the Procedure Best and the "Learning Key Competences throughout Life" and are now widely recognized as key factors for economic and cultural development across Europe.

An *endogenous* capacity to undertake and innovate is thus considered essential for competitive rivalry at a local and regional level - more qualified employment, rise of emerging ranks of activities and renewal of traditional sectors based on innovation. In this process the school can and should play a key role by anticipating the availability of awareness tools, experimentation and analysis to enable children and young people to value a change of culture, innovation and risk-taking (Pereira, Afonso, & Santos, 2013).

In the current context and considering that Portugal has been dominated, up until the last decade, by a culture where assertiveness and proactivity are distant concepts of dominant behavior, it is essential that higher education institutions (HEIs) put their knowledge and their skills into promoting attitudes and entrepreneurial behavior in their students.

According to these assumptions, we intend to present and analyse some initiatives and projects from the Polytechnic Institute of Castelo Branco (IPCB), Portugal, which are intended to respond to this challenge and have as its main objective the development of entrepreneurial skills as a support to scientific and pedagogical training quality. In this paper we focus our attention on the more detailed characterization and analysis of the Centro de Aprendizagem e Desenvolvimento da Infância - CeADIn (Learning and Development Center for Children), the most recent structure/valence to provide services to the community created by the institution.

The methodology used in this study is qualitative and essentially descriptive, where the analysis is supported by the data obtained through document research, participant observation and field notes that, as a founding member and integrating coordination team CeADIn, we were collecting and organizing.

2. Problem and Research Questions

In Portugal, citizens are traditionally little oriented to taking risks and are less prepared to think and act entrepreneurially. This attitude, culturally dominant, has not been properly tackled in higher education, which is traditionally focused on ensuring a qualification that is the guarantee of future employment. However, the dynamic changes associated with the economic crisis that has dominated the country, especially since 2011, dramatically changed the face of previously positive expectations, reinforcing the need for young people to be able to face a reality dominated by uncertainty and insecurity. According to Potter (2008), in Europe, entrepreneurship is still looking for its space and this requires that higher education go through a paradigm shift, including changing the fundamentals of its training program and its role in society.

For polytechnic institutions in general and schools of education in particular, considering their role in the professional qualification of educators and teachers, the challenge is decisive for its assertion and to be able to respond to one of the purposes that were in the origin of their creation, in particular in
economically and socially depressed areas – to contribute to the qualification of young people and enhance the development and well-being, based on a culture of personal and regional assertion.

Trying to give an answer to this problem we adopted the challenge of providing students of teacher’s education courses with entrepreneurial skills through their involvement in the project of creation and development of CeADIn in the School of Education (ESECB) of the IPCB.

In this sense, we organized this study to respond to the following questions:

- Can the HEIs develop entrepreneurial skills in students in training?
- What is the contribution of the CeADIn for this purpose, while valence of service to the community of the ESECB?

3. Conceptual Framework: Education for Entrepreneurship

Organizations and the contexts in which individuals are integrated are organized as spaces for opportunities for knowledge, innovation and development. The evidence, however, points to the existence of contexts that promote relationships that foster resiliency and entrepreneurship in individuals (Pereira, Afonso, & Santos, 2013).

The contexts of training / education are privileged contexts to promote the development of entrepreneurial skills. First of all, they are guided by competent and highly skilled professionals; secondly, because of the introduction of experiential teaching methods (learning by doing) that can complement the more traditional methods of teaching, providing a source of curriculum enrichment.

An effective process of training and development of entrepreneurial skills should take into consideration, among others, the following principles (Pereira, Afonso, & Santos, 2013; Gomes da Costa, & Carvalho, 2011; Carvalho, Costa, & Dominguinhos, 2010):

- Include a set of curricular and extracurricular programs that encourage the creation of an environment that organizes itself as an entrepreneurial ecosystem. The training should not be limited to the purpose of promoting entrepreneurship, but also must itself include entrepreneurial practices, methods and teaching strategies.
- Promote the development and adaptation of competences, the dissemination of knowledge and technology, helping to create "niches" of personal, professional and local level development, in a logic of synergies and interdependencies.
- Find the isomorphism - The transfer seems to be easier when there is great similarity between training contexts and application contexts. Training contexts with similar profiles to those pursued in application contexts, be it classrooms, formal or non-formal educational spaces, which seem to facilitate the transfer and change of practices.

Over the past decade, the development of entrepreneurial skills has been a concern taken on by the IPCB where the ESECB is integrated. It can be said that it was a pioneer institution in Portugal because it was at the genesis in 2003, and continues to promote, together with other polytechnics, the Poliempreende, an annual contest in order to develop the spirit of initiation in their students, stimulating these to the creation of their own business and enhancing the practical and professional nature of their training.
It also has in operation, since 2002, the Centro de Estudos e Desenvolvimento Regional – CEDER (Center for Studies and Regional Development). CEDER intends to act as a dynamic pole and coordinate research, playing an important role in the IPCB link to other public and private institutions, taking this perspective, an important role in supporting the design and implementation of entrepreneurial projects of their teachers and students.

In turn, the ESECB, has developed activities related to entrepreneurship education such as:

a) The creation of specific curricular subjects in the area of entrepreneurship, of a mandatory character in some of their courses but with optional access for all students.

b) The implementation of entrepreneurial projects involving students attending training courses for educators and teachers. These projects materialized in the creation of community service delivery centers including the CeADIn and Center of Science, Tradition and Culture (CT & C).

c) The establishment of international cooperation links with higher education institutions of reference in this area which has resulted in the development of research projects and the presentation of papers at international conferences.

d) The relationship of openness and cooperation with the community characterized its institutional position and that has developed in particular by conducting traineeships in education-oriented, social, sports and the business world institutions in general.

According to the professional nature of polytechnic education, all courses offered by ESECB include in their curricular study programs in a professional context, under the guidance of supervisors of the educational institution and professionals-experts who work at the traineeship location. These are organized as a pre-professional experience under supervision that challenges and enhances the autonomy, learning by doing through trial, error, reorganization, cooperation and progressive empowerment of our students.

These initiatives have allowed us to trace a path that gradually and in an integrated manner, are aimed at developing skills that, according to various authors (Pereira, Afonso, & Santos, 2015; Pereira, Ferreira, & Figueiredo, 2007) are the basis for the adoption of an entrepreneurial and proactive position.

According to the constructivist and socio-constructivist perspectives (Bruner, 1976; Vygotsy, 1991; Piaget, 1999) development and learning processes relate to the experience of problem situations to which the human being tries to respond in an individual building process, supported by contexts of interpersonal and socio-cultural interaction. For students to develop entrepreneurial skills and a proactive attitude, the training contexts should design learning as a process which is based on experimentation, the formulation of hypotheses and construction projects, which always involve susceptible challenges susceptible to lead either to successes or failures, questioning the representation, even if still socially dominant, of error penalization. The operationalization of these principles requires that, throughout the training course, the learning processes building upon the identification of problem issues and the construction of an interventional action, enhancing the autonomy and initiative of students.
The CeADIn was being designed and planned in accordance with these assumptions, having a solid basis for the grounds that the area of psychology takes on teacher training, operationalized in different disciplines and training strategies.

4. Methodology

4.1 Study objectives

The objectives underlying the presented study are:

- Highlight the importance of higher education institutions making their knowledge and skills available in promoting entrepreneurial attitudes and behavior among its students.

- Characterize the objectives and organizational structure of CeADIn as valence provision of community services provided by the ESECB.

- Analyse the contribution of CeADIn to develop entrepreneurial skills in students of teacher’s education courses.

- Present evidence of some results of the initiatives undertaken by CeADIn.

4.2 Methodological design

Considering the issues underlying the study and in order to meet its objectives, we use a qualitative methodology, organizing itself as a descriptive case study (Yin, 1994). According to this investigative design, the research questions are being formulated with the aim of studying phenomena in their complexity in natural context (Bogdan & Bilken, 1994). Yin (1994) considers that the context is of particular relevance in the descriptive case studies considering that its central objective is a detailed description of the phenomenon in question.

In order to make the description and characterization of CeADIn (object of our study) we use the following data collection techniques:

- Documental research - The documents used as a basis for analysis was the CeADIn Project; its Regulation; minutes of meetings.

- Participant observation and their field notes that, as a founding member and integrating coordination team of CeADIn, we were collecting and organizing.

Described below are the principles, objectives, organization and the type of actions developed by CeADIn, created in ESECB during the academic year of 2013-2014, and which is organized as an educational project for entrepreneurship.

5. Presentation and Data Analysis: The Learning and Development Center for Children – CeADIn

5.1 Some historical notes

CeADIn resulted from a project built and carried out in partnership with the Faculdade de Psicologia e de Ciências de Educação da Universidade de Coimbra (Faculty of Psychology and Educational Sciences of the University of Coimbra) from an idea by a teacher of the 1st cycle of basic education, a graduate from ESECB, and master in Psychology at the Faculty of Psychology and
Educational Sciences of the University of Coimbra. After their training and considering their scientific and pedagogical skills they were invited as a collaborator lecturer in ESECB. In this context, and in collaboration with other professionals in the psychology area of the two institutions involved, the creation project of CeADIn was conceived.

This project's mission is to provide an accredited service in the educational field to the school community of the area of influence of the institution. Its central aim is to provide a set of integrated development services of psycho-pedagogical skills for students in initial teacher’s education, providing, at the same time, educational activities and interventions that promote psychosocial adjustment and academic success of pupils of the first years of schooling.

The CeADIn target audience includes pupils from pre-school and 1st, 2nd and 3ºcycles of Basic Education; parents, families, educators and teachers and also the educational community in general.

CeADIn started working in May 2014 and, taking into account the vocational service to the community, the coordination team held its formal presentation in the ESECB Auditorium, having invited the academic community of the ESECB, the representative of the local authority and the directors of educational institutions and social support of the influence of ESECB region to attend.

5.2 Objectives
The main objectives that guide the intervention of CeADIn are as follows:

- Build a community of learning and research in the field of education and educational psychology.
- Allow our students to be co-builders in this project.
- To promote good practices for the development and learning of children and people in general.
- Insist on the design of comprehensive and integrated nature of development and learning, the value of play, of active and challenging learning, of artistic expression and the role of the ‘Other’ in the co-construction of individuality.

In order to operationalize these objectives, CeADIn generates content, synergies and psychoeducational intervention aiming to achieve an integrated response to the needs identified in the following domains:

a) Escola Superior de Educação de Castelo Branco (School of Education of Castelo Branco);
b) Students from teacher’s education courses;
c) Pupils from pre-school and 1st, 2nd and 3ºcycles of Basic Education and educational community.

Table 1. Explanation of the objectives according to the three domains of intervention needs

<table>
<thead>
<tr>
<th>Superior School of Education of Castelo Branco</th>
<th>Students from teacher’s education courses</th>
<th>Pupils from pre-school and 1st, 2nd and 3ºcycles of Basic Education and educational community</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Contribute to the recognition and visibility of the training offer of the institution.</td>
<td>• Provide the students with management and implementation skills for intervention and entrepreneurship projects.</td>
<td>• Provision of a consultancy, diagnostics and psychoeducational service.</td>
</tr>
<tr>
<td>• Contribute to the external recognition of the School of</td>
<td></td>
<td>• Promotion of study, analysis, problem solving, self-monitoring and regulation of learning skills.</td>
</tr>
<tr>
<td>Education of Castelo Branco as promoting institution of innovative and entrepreneurs projects.</td>
<td>• Promote the integration of practical and theoretical knowledge and psycho-pedagogical skills. • Help students develop research and innovation skills.</td>
<td>• Promote adjustment and socioemotional wellness in adult educators and children.</td>
</tr>
</tbody>
</table>

5.3 Organizational structure and areas of intervention/valences

The CeADIn favors a research component, based on the establishment program of both national and international synergies and partnerships, that encourage the development and implementation of good practices through the continuous sharing of knowledge and experience in psychoeducational domain.

In this sense, its organizational structure, in addition to the coordination team that includes ESECB teachers in Psychology area and one teacher of the Faculty of Psychology and Educational Sciences of the University of Coimbra, includes a community advisory group and scientific-professionals consultants. The scientific and professional consultants represent a group of professionals at national and international level with different areas of interest and intervention, across the mission and the services by CeADIn.

It includes five areas of intervention / valences that claim to work permanently in an integrated manner and functions of complementarity regime and skills development:

a) Laboratório de Desenvolvimento de Projetos Lúdico-pedagógicos (Project Development Lab):
This laboratory aims to involve students in the development and promotion of educational intervention projects. These projects are organized as theoretical and practical work within the psychology field of disciplines, particularly in Developmental Psychology and Psychology of Learning and Motivation. The process of design, implementation and evaluation analysis is monitored by the teachers responsible for teaching these disciplines who also integrate the CeADIn coordination team.

The integration of this valence is justified by the importance that the initial learning of academic and social skills integrated into play interventions represent to the needs identified at the level of training of pupils at an earlier age.

b) Centro de Apoio ao Estudo e Acompanhamento Escolar (Centre for Study and School Accompaniment):
The primary focus of this valence is mainly the students of the first levels of education who are most at risk of school maladjustment or who show academic difficulties. It is an activity undertaken by students / future teachers under the supervision of the CeADIn coordination team, allowing them to develop skills of pedagogical and scientific nature in direct and interactive contact with children. It is organized as a complement of expert support in which the development of analytical skills, problem solving and self-regulation of learning are part of the follow-up to the study and performance of schoolwork.
Children who attend this center are evaluated, at first, in psychology or neuropsychology consultation (valence of CeADIn described below) in a close relationship with their parents.

c) **Centro de Psicologia e Apoio Psicopedagógico** (Psychology Center and Psycho-pedagogical Support) has the fundamental mission of specialized intervention in the field of psychological, psychoeducational and neuropsychological assessment, focused on evaluating psychosocial adjustment difficulties and signs of localized learning difficulties, in order to intervene in an integrated and systemic perspective in the wider context of the child's experience. In contiguity with the outlook of the World Health Organization (2002) which includes the subjective well-being, self-efficacy perceived autonomy, competence, intergenerational dependence, and self-realization of the intellectual and emotional potential of the person, mental health is not limited to the absence of mental disorders, becoming a determining factor in the overall well-being of individuals and particular influence in education.

d) **O Centro de Formação Educativa** (Educational and Psychopedagogical Training Centre) aims to provide the educational community in general, teachers, parents, of knowledge in educational psychology field, trying to answer their doubts, fears and concerns regarding the experience of parenting and of school and educational requirements.

Another area of intervention of this valence of CeADIn is operationalized in the provision of training accredited by the Conselho Científico e Pedagógico da Formação Contínua de Professores (Scientific and Pedagogical Council of Continuous Teacher Training - formal structure at national level) in order to develop practical and innovative training activities for teachers already professionalized. At this time, the CeADIn offers two accredited training programs aimed at early childhood educators and teachers of the 1st and 2nd cycles of basic education:

- Produção de DST (digital story telling) - Recursos multimedia como estratégia para reduzir a indisciplina na escola (Digital storytelling - Multimedia resources as a strategy to reduce lack of discipline in schools).

- Dificuldades de Leitura e Escrita – uma abordagem psicopedagógica (Reading and Writing Difficulties - A psycho-educational approach).

e) **Núcleo de Investigação em Educação e Inovação** (Center for Educational Research and Innovation):

We share with Viegas Abreu (2004) the idea that the dynamics of the XXI century school, the teacher more than to teach or transmit content should be able to develop, in partnership with their students, action projects and programs and investigate the processes, variables and contingencies that influence the course and the results of these programs.

Over the past decades, experts have been aware of the need for teacher training models to have as their objective the development of investigative skills, understanding the importance of creating teams that include researchers, trainers and teachers (Formosinho, &Nisa, 2001).
According to these assumptions, the CeADIn is organized with a *modus operandi* which validates its intervention through investigative processes based on a logic of action-research or project work. These methodologies operationalize in the development (planning, evaluation and reorganization) of projects for different CeADIn action aspects, enabling students in training with questioning attitudes and reflection and change of educational intervention based practices.

The development of some of these projects culminates in a Master's theses, in the preparation of papers or posters to be presented in scientific and/or educational events.

The CeADIn research center also favors the development of research projects in partnership with international and national institutions, particularly with their scientific and professional consultants.

5.4. *Initiatives and achievements: some evidences*

Since in the context of this article the objective is not to present all the initiatives and achievements undertaken by CeADIn, over its two years of existence, we have chosen to present the most significant at the *Núcleo de Investigação em Educação e Inovação* (*Research Center for Education and Innovation*) at its transversal nature to the different areas of intervention. For this purpose we selected the information considered most relevant:

- **Master's theses**
  - *Master in Special Education* - three theses on the following topics:
    - The plastic and graphic expression in children with Autistic Spectrum Disorders (ASD).
    - Construction of an intervention program for children with difficulties in reading and writing;
    - Promotion of reading skills in a child with Trisomy 21.
  - *Master in Pre-School and Primary Education* – six theses:
    - The promotion of socio-emotional skills in preschool children.
    - Relationship between the development of creativity and the elaboration of mind mapping (in preparation).
    - The graphic expression potentiates learning in preschool children?
    - The promotion of moral development with use of children's literature.
    - The development of social Skills in school Context.
    - The relationship between the communicative and interactive behaviors of parents and the adaptation of children at 1 year of formal schooling.

- **Organization of the “1º Congresso em Educação, Pedagogia e Inovação”** (1st Congress in Education, Pedagogy and Innovation) - 5 and 6 June, 2015.

The Congress was attended by 100 participants from various HEIs at national and international level (Universities of Salamanca and Extremadura, Spain). In this context, in addition to the active role that students took on the organizing committee, there was co-authored communication, resulting in a final work of a master's degree in Special Education and seven posters, undertaken in the discipline Psychology of Learning and Motivation or discipline of Research Methodologies in Education (the abstracts are available at http://ceadin.ipcb.pt/).
Publications

This year the e-book for the abstracts of “1º Congresso em Educação, Pedagogia e Inovação” and the e-book for the papers of presented communications was published (A Inovação Educativa e os Desafios para a Educação no Século XXI) - available for consultation on CeADIn site: http://ceadin.ipcb.pt/.

- Publication of a chapter in the book co-authored by a member of the CeADIn coordination team and a degree in Special Education from ESECB. This chapter is the result of a master’s thesis oriented by a member of the CeADIn coordination team:

- Construction of a program to promote parenting skills presented in oral communication format and published in the minutes of the IV International Congress “Atención Temprana e Educación Familiar.”

Other initiatives:

- Coordination and co-authored the “Projeto Educativo do Concelho de Idanha-a-Nova” (Project of Education of the Municipality of Idanha-a-Nova, Portugal).

- Consultancy work in the TEIP Project (Educational Territories of Priority Intervention) in two school clusters in the Castelo Branco region (2014 and 2015).

6. Final Remarks

In Europe, and particularly in Portugal, entrepreneurship starts timidly to build its space. In this process the school has a key role by providing awareness testing and realization tools that enable new generations to value a change of culture, innovation and risk-taking.

In our perspective (Pereira, Afonso, & Santos, 2015) the HEIs as responsible for the training of skilled professionals, particularly in the area of education, can decisively contribute to entrepreneurship and is being regarded as an attitude and competence present in the individual and community development affirmation.

The assumption of change towards this new paradigm that redefines the fundamentals of training activity of the HEIs and its role in society, is a lengthy and complex but desired process. According to a recent study (Caseiro et al., 2014) a significant percentage of teachers of Polytechnic Higher Education in Portugal attaches significant importance to entrepreneurial skills and feel motivated to implement them in their formative action.

We intend with this paper give a special mention to a project to set up an attempt to create a learning environment that is organized as an entrepreneurial ecosystem, according to the following characteristics:

- The CeADIn is a structure to provide services to the community that aims to respond to identified needs;
• It involves teachers and students in processes of experimentation and research-action;
• Allows the construction of knowledge is based on practical and investigative intervention;
• Dynamizes processes of interaction between HEIs and different local actors, individually and/or institutional;
• Bases its action on the integration of training, peer learning, intervention, innovation and research.
• Operationalizes psychoeducational interventions aimed at the wellbeing and empowerment of the actors involved.

As a final point of the characterization and analysis we intend to do in this paper, we are aware of the limits of a descriptive case study but we think we have operationalized responses to the outlined objectives and have contributed to a reflection on the role of HEIs in promoting entrepreneurial skills basing their action on the integration of training, co-learning, intervention, innovation and research.

References


Unpublished Documents:


Minuta da reunião da equipa de coordenação do CeADIn, do dia 5 de julho de 2016.