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Foreword

To understand the origin of this Conference we should, first of all, refer the European Commission strong effort aiming to develop effective teacher education systems for entrepreneurship, since the High Level Symposium on "Entrepreneurship Education: Teacher Education as critical success factor", which took place in Budapest on 7-8 April 2011. Two workshops where then organized during 2012. ENTENP 2013 came forward as a result of the participation of Cristina Pereira, Maria do Carmo Vieira da Silva, Maria Margarida Afonso, Teresa Gonçalves and Carlos Reis, delegates from 4 Portuguese High Education Institutions at the First workshop on enabling teachers for entrepreneurship education – initial teacher Education that was held at Dublin between 2 and 4 of May 2012.

As you know the Conference is hosted by Guarda Polytechnic, that is responsible for the organization with the cooperation of Castelo Branco Polytechnic, Viana do Castelo Polytechnic and Nova de Lisboa University.

ENTENP 2013 follows the above mentioned lead and is addressed to all practitioners from the area of teacher and entrepreneurship education, but also to early-stage users of education in entrepreneurship. The purpose of the event is to discuss current issues and exchange good-practice examples in the field of enabling teachers for entrepreneurship education, looking at possible areas of development and cooperation.

The keynote of ENTENP is on enabling teachers for entrepreneurship education. So in the first place we should ask ourselves why is there a haste about this topic and, specially, for teachers. To not fetch the water very far, we could say that, as in other cases, it is advisable to intervene upstream in order to have the indispensable conditions later on. It happens that downstream the European Union is wants to become a competitive economy, which requires an entrepreneurial mindset. However we should keep in mind that the aim of the EU doesn’t confines only to economy. The Union also aims to be an intelligent and sustainable society; issues that pertains social cohesion, employment, inclusion and sustainability, among other desiderata, like freedom, democracy and emancipation. Being these, in our point of view, the really aims our societies long for. Thus we should be aware of the priority that creativity takes over entrepreneurship. If it is rather consensual that the later requires creativity, education should not aim to it only for entrepreneurship sake, but because it is an intrinsic component of education central aim: human perfectibility. So we should not really be aiming to raise entrepreneurs at the age of ten, our purpose should rather be to raise creative people that can be successful entrepreneurs in all areas of their lives.

The Conference received submissions from 91 authors of 13 different countries: Denmark, Finland, Ireland, Latvia, Lithuania, Nigeria, Portugal, Singapore, Slovenia, South Africa, Spain, Turkey and United Kingdom. The 48 selected submissions cover the following topics: 1. Defining Entrepreneurship Education (EE) for Initial Teacher Education (ITE); 2. EE Knowledge, skills, attitudes and competences; 3. Key dynamics of learning and appropriate pedagogical methods for EE; 4. Assessment methods and quality assurance mechanisms for EE; 5. EE Experiences and Good Practices; 6. Organisational & structural changes to support EE in ITE; 7. Materials for EE in ITE.

Along with the presentations, the Conference included two keynote speeches. At the open ceremony Malcolm Hoare gave a lecture on "Teacher training for Entrepreneurship Education – The Ethical Imperative" and before the closing ceremony Dana Redford spoke about "The Future of Entrepreneurship Education in Portugal and the EU". Besides on the first day we had an Expert’s Panel on "Entrepreneurship education experiences and methodologies", with the contribution of Delta Portugal and The Mymachine Project, from Belgium and at the second day participants assisted another Expert’s Panel on "European and national perspective on strategies of entrepreneurship education", with the cesses of Dana Redford, Pedro Dominguinhos and Ilda Figueiredo.

Carlos Sousa Reis
Pedro Tadeu
Teresa Paiva
1. LEARNING STYLES AND TEAM ROLES – LESSONS FOR GREGORC BASED TEAMS FOR EFFECTIVE ENTERPRISE DEVELOPMENT

"The nice thing about teamwork is that you always have others on your side." (Margaret Carty)

Entrepreneurship education is receiving more focus as the contemporary economic environment continues to show limited recovery from the financial malaise of the past 5 years. This coupled to the recognition of the role of entrepreneurs and SMEs, as ‘key generators of employment and income, and drivers of innovation and growth’ (OECD: Centre for Entrepreneurship, SMEs and Local Development 2009:6) is changing the role of entrepreneurship education across society. The OECD report continues and observes that in the European Union SMEs ‘account for over 99% of all enterprises...[g]iven their importance in all economies, they are essential for the economic recovery’ (ibid). For this reason the current global economic crisis has given much impetus to both the concept of entrepreneurship and the nature of entrepreneurship education.

The period up to 2007/08 saw entrepreneurship education as a burgeoning discipline in academia. In the current economic environment, with declining labour market absorption rates, entrepreneurship education has become both a national economic and education imperative. As early as 2000, in the USA Charney and Libecap observed that ‘whereas 15 years ago only a handful of schools offered courses in entrepreneurship, today more than 1,500 colleges and universities offer some form of entrepreneurship training’ (Charney and Libecap 2000:1)

This paper does not aim to present an in-depth analysis of all aspects of entrepreneurship training, however, against the backdrop of role and importance of entrepreneurship it aims to offer some basic insights into the pedagogic debates associated with entrepreneurship education. Further, it attempts to build a foundation for a costing model for teaching entrepreneurship education developed around consideration of learning styles.

Fundamentally, the concept of effective enterprise education cannot be predicated on ‘one size fits all’, from both a pedagogic perspective and the implications for ineffective cost/benefit considerations. Firstly, we will address the general momentum supporting the global focus on entrepreneurship education and issues associated with entrepreneurship education, followed by a basic analysis of Gregorc learning styles and implications for teaching methodologies and finally possible implications for costing will be assessed and suggestions offered for further research.
The World Economic Forum, through its Global Education initiative, highlighted in 2007 the need to promote global awareness and action with regard to entrepreneurship education (WEF 2009). In terms of this focus the WEF has as its aims (WEF 2009:9):

1) Highlight and raise awareness of the importance of entrepreneurship education in spurring economic growth and achieving the Millennium Development Goals
2) Consolidate existing knowledge and good practices in entrepreneurship education around the world to enable the development of innovative new tools, approaches and delivery methods
3) Provide recommendations to governments, academia, the private sector and other actors on the development and delivery of effective education programmes for entrepreneurship
4) Launch a process in which the recommendations can be discussed on the global, regional, national and local levels and implemented with the involvement of key stakeholders.

Developing and delivering effective pedagogic methodologies are therefore central to the global initiative emanating from the World Economic Forum. ‘It is widely accepted that the future prosperity of post-industrial societies depends on the strength of their entrepreneurial culture’ (Heeboll 1997:171). If this culture is to be effectively developed and nurtured institutions, governments and third sector organisations must embrace coherent and integrated pedagogic philosophies.

The very nature of ‘entrepreneurial’ activity predicates innovation and application of practical skills. As such the question of whether entrepreneurs are born or bred becomes relevant. Lukovski (2011), states that it is difficult for entrepreneurs to demonstrate a homogeneous group of characteristics. Inner entrepreneurial characteristics are in the main determined by environmental factors and therefore entrepreneurs are a heterogeneous group. There are implications here for the role of the entrepreneurship ‘teacher’ which has to be adapted within the context of taking the responsibility for nurturing and developing entrepreneurial talent. The ‘teachers’ become process facilitators whose responsibility is to structure the pedagogy in a coherent and thoughtful manner drawing resources for all possible sources and resources. In essence the teacher as ‘entrepreneurial facilitator’ must evolve beyond the teachers as the gate keeper or assessor of the merits or otherwise of ideas and their currency in terms of success or otherwise. Mullins and Komisar (2009) recount the history of PayPal which started life effectively as ‘network security for networked devices’ at a time when networked devices did not exist. It’s not a leap of imagination to speculate how that idea would have been received in many enterprise education classroom and development centres.

Any student or emerging enterprise team or potential start up has aspirations which are often unrealistic and do not necessarily play to the strengths and weaknesses in a study group. This requires innovative and eclectic enterprise educational methodologies that aim to support these aspirations in a flexible and enabling manner. Therefore developing effective curricula and responding to these demands will create significant institutional strains and may also exposes the limitations of legacy institutional thinking, with concomitant insecurities, intransigence and other obstacles to rapid institutional change.

This presents a dual challenge for the entrepreneurial educator, which can be categorised as the need for:

a) Effective, proactive and innovative curriculum development
b) Organisational management and change

The theme of this paper is firmly focussed on the first, and aims to integrate an enterprise education strategy and curriculum development exercise predicated on recognising different learning styles and offer a model for cost consideration in delivery of effective training. The primary aim is to ensure that the teaching and learning environment is supportive for all different learning styles while meeting the start-up agenda. In terms of the second challenge, the proposed model aims to offer costing base
lines in terms of minimum pedagogic investment for the highest possible return in terms of learning outcomes.

The trajectory from initial business idea through research, planning and development to sustainability is a complex issue that does not easily lend itself to standard pedagogic approaches. In order to be effective the systems, processes, activities and other approaches must be as eclectic as possible, meeting the diverse needs of different learners and learning styles. Huang in discussion of entrepreneurship education observes ‘the vested pedagogical effort in the programs needs to be empirically evaluated especially in the context of advanced learning technologies’ (Huang 2008:3).

Huang continues and identifies the key research questions for entrepreneurship education as (ibid):

- What are the pedagogical effects of entrepreneurship education?
- What are learners’ entrepreneurial tendencies?
- What are the roles of learning styles?
- How can educators customize the learning environment?
- Can learning technologies help? How?

These are key questions that need to be asked when consideration is given to the design, development and delivery of an effective enterprise education programme. Every coherent and effective teaching and learning process starts with the end in mind, lesson plans carry learning outcomes, skill competencies development and similar learning objectives. These are invariably supported by a plethora of assessment criteria and other evaluative frameworks to offer a clear sense of the effectiveness of the teaching and learning and by extension the investment in education and training. In the case of entrepreneurship education many metrics lend themselves to be applied, i.e. How many new ideas developed, how many business started, etc. However, unlike standard evaluative metrics they are easily abused. For example, it is simple in most countries to register a business, the lack of suitable structures to ensure that unviable business are not registered often does not exist.

Consequently, if an effective entrepreneurship programme is to develop the outcomes of the teaching and learning exercise must be identified, these must be linked to the teaching and learning methodologies and not be easily manipulated by external variables, such as simply registering a business.

Developing a suitable framework for assessing the outcomes expected from an entrepreneurship education process is important. The Quality Assurance Agency (QAA) in the United Kingdom indentifies the outcomes of an effective entrepreneurship programme will have successful students exhibiting the following behaviours (QAA 2012:13):

- the ability to seek out, be alert to, and identify opportunities (opportunity recognition)
- creative and innovative approaches (problem solving)
- the initiative to act on perceived opportunities while considering risk factors (taking action)
- independent responsibility for managing projects (managing autonomously)
- the ability to reflect and persevere in challenging environments in pursuit of achieving desired objectives or goals (personal awareness)
- use of social skills to build trust, relationships and networks and to communicate ideas and information (networking and communication)

In the case of entrepreneurial attributes (ibid), students should be able to:

- recognise and achieve goals and ambitions, especially in response to challenge (goals and ambitions)
- enhance self-confidence and belief through practice of enterprising skills and behaviours (self-confidence)
- demonstrate perseverance, resilience and determination to achieve goals, especially within challenging situations (perseverance)
- recognise that they are in control of their own destiny (internal locus of control) and use this understanding effectively within enterprising situations
• take action and learn both from actions and active experimentation (action orientation)
• innovate and offer creative solutions to challenging and complex problems (innovation and creativity)

While entrepreneurial skills (ibid), students should be able to:
• take creative and innovative approaches that are evidenced through multiple solutions and reflective processes (creativity and innovation)
• persuade others through informed opinion and negotiate support for ideas (persuasion and negotiation)
• manage a range of enterprise projects and situations appropriately, for example by proposing alternatives or taking a holistic approach (approach to management)
• evaluate issues and make decisions in situations of ambiguity, uncertainty and risk (decision making)
• use networking skills effectively, for example to build or validate ideas or to build support for ideas with potential colleagues or stakeholders (networking)
• recognise patterns and opportunities in complex situations and environments (opportunity recognition)

These behaviours, attributes and skills should inform the design of any entrepreneurship education process and act as a formative and summative assessment framing structure. With these outcomes as a goal for any programme the question of teaching and learning methodology arises. Central to effective entrepreneurship education is the need to assess the learning styles of the students and participants.

Assessing learning styles is kernel to an effective entrepreneurship education programme as it ensures that the diverse nature of entrepreneurship is captured in the training of entrepreneurs. Harris et al outline a number of learning styles (Harris et al 2009: 8-11):
• Myers Briggs
• Gagné’s Theory of Learning Styles
• Kolb learning style inventory
• The Ned Herrmann Whole Brain Dominance Theory
• The Gregorc style delineator

Each of these styles has lessons for the entrepreneurship educator, however, Huang (op cit:6) argues that for the research questions that they have identified, Gregorc style delineator is sufficient. Accepting Huang and his colleagues perspective in this regard for the present purposes it can be easily demonstrated how the four mind qualities delineated by Gregorc can be used to develop an entrepreneurship education programme. The four are:
• Concrete
• Sequential
• Random
• Abstract

This gives rise to four frames of reference (Huang op cit: 7):

<table>
<thead>
<tr>
<th>Frame of reference</th>
<th>CS (Concrete Sequential)</th>
<th>AS (Abstract Sequential)</th>
<th>AR (Abstract Random)</th>
<th>CR (Concrete Random)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key words</td>
<td>Practical</td>
<td>Probable</td>
<td>Potential</td>
<td>Possible</td>
</tr>
<tr>
<td>World of reality</td>
<td>Concrete world of the physical senses</td>
<td>Abstract world of the intellect based upon concrete world</td>
<td>Abstract world of feeling and emotion</td>
<td>Concrete world of activity and abstract world of intuition</td>
</tr>
<tr>
<td>Ordering ability</td>
<td>Sequential step by step linear progression</td>
<td>Sequential and two dimensional tree like</td>
<td>Random web-like and multi-dimensional</td>
<td>Random three dimensional patterns</td>
</tr>
<tr>
<td>View of time</td>
<td>Discrete units of past, present, future</td>
<td>The present, historical past, and projected future</td>
<td>The moment time is artificial and restrictive</td>
<td>Now: total of the past, interactive present, and seed for the future</td>
</tr>
</tbody>
</table>
Incorporating these four frames of reference in an enterprise start up team would arguably lay the most solid foundation for creating and pursuing ideas. These points to the need to apply suitable initial pre-programme assessment structures for allocation to group work activities. Claxton and Murrell (1987) and Butler and Pinto-zipp (2006). Huang et al (op cit 8) generate the following table for effective educational methodologies to match the different learning styles (Butler and Pinto-zipp 2006):

<table>
<thead>
<tr>
<th>Frame of reference</th>
<th>CS (Concrete Sequential)</th>
<th>AS (Abstract Sequential)</th>
<th>AR (Abstract Random)</th>
<th>CR (Concrete Random)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preference</td>
<td>Deriving, information through direct, hands-on experience. Touchable, concrete materials</td>
<td>Experimental, trial-and-error attitude, flashes of insight</td>
<td>Strong skills in working with written and verbal symbols. Grasp concepts and ideas vicariously</td>
<td>Receive information in an unstructured and like group discussions and multi-sensory experiences</td>
</tr>
<tr>
<td>Methods</td>
<td>Workbooks, demonstration teaching, programmed instruction, Well-organized field trips, practical orientation</td>
<td>Games, simulations, independent study projects, problem-solving activities, optional assignments</td>
<td>Reading and listening, rational presentations given by authorities</td>
<td>Medium movies, group discussion, question-and-answer sessions, and television</td>
</tr>
<tr>
<td>Media, teaching methods and practices</td>
<td>• Workbooks (B) • Handouts (A) • Drill (A) • Demonstrations (A) • Results orientated (B) • Practical lessons (B) • Hands-on practice (C) • Projects (B) • Models (B) • Manuals (B) • Step-by-step directions • Programmed instruction (B) • Orderly classroom (A) • Orderly lab (B) • Direct application problems (B) • Computer-aided information (B)</td>
<td>• Experiments (B) • Simulations (C) • Mini-lectures (A) • Critical issues (B) • Interactive video (C) • Problem-solving curriculum (B) • Independent study (A) • Computer and other games (B) • Trial and error discovery (B) • Optional reading assignments (A) • Invent new ways of doing things (C) • Stress challenges and probing questions (B) • Insist students think for themselves (A)</td>
<td>• Lecture (A) • Textbooks (A) • Audiotapes (B) • Documented evidence (B) • Study carrels (B) • Likes scope &amp; sequence • Evaluate by formal testing (B) • Intellectual debate (B) • Guide individual study (B) • Likes long-range plans (B) • Teach from a base of content expertise (B) • Supplemental reading assignment (B) • Develop blueprint from an idea to visualize final produce (B)</td>
<td>• Group discussion (A) • Use media (B) • Flexible with time demands (B) • Personalized classes (C) • Concerned with mood of class (A) • Use thematic approach to content (B) • Create aesthetic or interpretative products (C) • Assign group rather than individual activities (B)</td>
</tr>
</tbody>
</table>

For each of the media, teaching methods and practices, a loose costing model is applied using the teacher/facilitator/practitioner engagement\(^1\) as the key resource cost, in terms of design, development, organising and delivery. This model, although in early stage of development can provide the initial framework that will inform future real cost grounded research at other institutions.

- **Cost Band A** – Low teacher engagement
- **Cost Band B** – Medium teacher engagement

\(^1\)This is very ad hoc at this stage of the model’s evolution but is sufficient to create the initial framework that will inform more real cost based research at partner institutions.
- **Cost Band C** – High teacher engagement

  Given the nature of the categorisation used here there is extensive scope for debate, however, for present purposes the delineation acts as a guide for further framing on the base that this paper aims to layout. This costing framework will be applied later to establish focal pedagogic approaches that are resource and budget sensitive.

  In order to develop the concept of Gregorc learning styles applicability to the design of entrepreneurship programmes, it is necessary to explore what the ‘perfect’ enterprise start-up team should comprise of in terms of roles and characteristics. For this purpose Leslie et al in their paper *Managerial Effectiveness in a Global Context* offer 7 managerial roles (Leslie et al 2002:11):

  **Informational Roles**
  1. *Monitor*: scan environments, monitor units, probe and seek information, act as corporate nerve center of incoming information.
  2. *Spokesperson*: communicate and disseminate information with multiple levels of the internal and extra-organizational system, advocate and represent the organization.

  **Interpersonal Roles**
  3. *Leader*: motivate, coach, build teams, maintain corporate climate and culture, and supervise the work of others.
  4. *Liaison*: network, coordinate, link entities, and span organizational boundaries.

  **Action Roles**
  5. *Decision maker*: take action, troubleshoot, make decisions, and use power to get things done.
  6. *Innovator*: try new approaches, seize opportunities, generate new ideas, and promote a vision.
  7. *Negotiator*: make deals, translate strategy into action, negotiate contracts, manage conflict, and confront others.

  Using the Huang et al (2008) frames of reference and the managerial roles identified by Leslie et al (2002) the educator can design effective entrepreneurial education teaching and learning activities. Allocating students to groups that have a diverse cross section of learning styles while mapping roles to learning styles, a more scientific pedagogic framework will evolve. With diverse learning styles being catered for throughout the programme the achievement of the outcomes are more likely to be realised for the groups and the individual students and participants. Further, it will allow for more individualised learner experiences and a more fertile environment for mapping professional development trajectories for learners.

  Huang et al (2008) research, surprisingly, generated a clear, positive correlation between CS learning style and entrepreneurial tendencies. However, in the case of CR learning styles their results showed a negative correlation. These results are surprising in so far as the prima facie view is that entrepreneurs are much more random and disruptive, as opposed to concrete and sequential. Although it can also be argued that success in entrepreneurial ventures call for the concrete and sequential. Huang et al continue and conclude (Huang et al 2006:13):

  - CS style students who are practical and focus on material reality have strong entrepreneurial tendency to achieve their visionary goals
  - CR style students who have strong sense of ego and focus on process have negative minds to be entrepreneurs for their concern of risk

  These conclusion are generated in terms of the individual learner and the research parameters are predicated on five motivators for learners on an entrepreneurship education programme (ibid 10):
  - Need for achievement
  - Need for autonomy
- Creativity tendency
- Moderate/calculated risk taking
- Drive and determination

Taking the Leslie et al (2002) managerial roles above and the associated skills and mapping onto relevant frames of reference generates the following table. This also offers, loosely, a coherent design framework for effective curriculum development and team allocation.

<table>
<thead>
<tr>
<th>Frames of reference</th>
<th>Managerial Roles</th>
<th>CS (Concrete Sequential)</th>
<th>CR (Concrete Random)</th>
<th>AS (Abstract Sequential)</th>
<th>AR (Abstract Random)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>- Deriving, information through direct, hands-on experience. Touchable, concrete materials</td>
<td>- Receive information in an unstructured and like group discussions and multi-sensory experiences</td>
<td>- Experimental, trial-and-error attitude, flashes of insight</td>
<td>- Strong skills in working with written and verbal symbols. Grasp concepts and ideas vicariously</td>
</tr>
<tr>
<td>Monitor</td>
<td></td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Spokesperson</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liaison</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decision maker</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovator</td>
<td></td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Negotiator</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
</tr>
</tbody>
</table>

The exercise in the table above is unstructured and open to extensive debate but aims at developing an analytical paradigm for the allocation of roles within a group based entrepreneurship education process for supporting student and general enterprise development while identifying the best pedagogic tools as per Butler and Pinto-zipp’s (2006) table.

For example, assuming the team in question needs to develop its skills in monitoring and innovation, according to the table above this would generate a need to focus on CS, AS and AR learning styles for monitoring and CR, AS, AR for innovation. When the costs categories are added as above what is generated is a model for costing a suitable enterprise education programme:

<table>
<thead>
<tr>
<th>Methods, media, teaching methods &amp; practices</th>
<th>CS (Concrete Sequential)</th>
<th>AS (Abstract Sequential)</th>
<th>AR (Abstract Random)</th>
<th>CR (Concrete Random)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost band A</td>
<td>Handouts (A)</td>
<td>Mini-lectures (A)</td>
<td>Lecture (A)</td>
<td>Group discussion (A)</td>
</tr>
<tr>
<td></td>
<td>Drill (A)</td>
<td>Independent study (A)</td>
<td>Textbooks (A)</td>
<td>Concerned with mood of class (A)</td>
</tr>
<tr>
<td></td>
<td>Demonstrations (A)</td>
<td>Optional reading assignments (A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Orderly classroom (A)</td>
<td>Insist students think for themselves (A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost band B</td>
<td>Experiments (B)</td>
<td>Audiotapes (B)</td>
<td>Group discussion (A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Results orientated (B)</td>
<td>Documented evidence (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practical lessons (B)</td>
<td>Study carrels (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Projects (B)</td>
<td>Likes scope &amp; sequence (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Models (B)</td>
<td>Evaluate by formal testing (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manuals (B)</td>
<td>Intellectual debate (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step-by-step directions (B)</td>
<td>Guide individual study (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Programmed instruction (B)</td>
<td>Likes long-range plans (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Direct application problems (B)</td>
<td>Teach from a base of content expertise (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Supplemental reading assignment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Although the allocation in terms of cost bands is debatable, the underlying merits are clear, therefore developing the example above further, i.e. a team requiring capacity development for monitoring and with team member that favour the following learning styles CS, AS and AR. Alternatively, sub-teams can be created with these learning bias with the view to assuming the monitoring or innovation portfolios.

Applying this framework would generate possible pedagogic options such as:

<table>
<thead>
<tr>
<th>Cost band C</th>
<th>(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Computer-aided information (C)</td>
<td></td>
</tr>
<tr>
<td>• Hands-on practice (C)</td>
<td></td>
</tr>
<tr>
<td>• Simulations (C)</td>
<td></td>
</tr>
<tr>
<td>• Interactive video (C)</td>
<td></td>
</tr>
<tr>
<td>• Invent new ways of doing things (C)</td>
<td></td>
</tr>
<tr>
<td>• Develop blueprint from an idea to visualize final produce (C)</td>
<td></td>
</tr>
<tr>
<td>• Personalized classes (C)</td>
<td></td>
</tr>
<tr>
<td>• Create aesthetic or interpretative products (C)</td>
<td></td>
</tr>
</tbody>
</table>

Herod (2004) offers further refinement in terms of planning the teaching and learning methodological environment against the learning styles, by adding this loop the enterprise educator can ensure the widest impact for each cost band.

Using CS learners as an example Herod delivers the following table:

<table>
<thead>
<tr>
<th>Frame of reference</th>
<th>CS (Concrete Sequential)</th>
<th>AS (Abstract Sequential)</th>
<th>AR (Abstract Random)</th>
<th>CR (Concrete Random)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Band A</td>
<td>Orderly classroom</td>
<td>Mini-lectures</td>
<td>Textbooks</td>
<td>Group discussion</td>
</tr>
<tr>
<td>Cost Band B</td>
<td>Workbooks</td>
<td>Computer and other games</td>
<td>Intellectual debate</td>
<td>Assign group rather than individual activities</td>
</tr>
<tr>
<td>Cost Band C</td>
<td>Computer-aided information</td>
<td>Invent new ways of doing things</td>
<td>Develop blueprint from an idea to visualize final produce</td>
<td>Personalized classes</td>
</tr>
</tbody>
</table>

CS learners can be described as...  CS learners have natural abilities as...  CS learners work best when they...  CS learners may have difficulty with...  CS learners can stretch their style by...

- habitual
- particular about their appearance
- punctual
- rarely giving compliments
- having high expectations
- disciplinarians
- having keen sensory perceptions
- seeing issues as black or white

- focus on details and specific results
- like to work with facts
- carry out tasks in a step-by-step way
- plan their time
- are accurate and precise
- prefer working under structured conditions

- know the accepted way of doing things
- are given exact directions and examples
- can apply ideas in a practical, hands-on way
- are given approval for specific work done
- can be consistent and efficient

- choosing from many options
- acting without specific directions
- with change if a reason is not given
- taking new approaches
- dealing with opposing views
- interpreting abstract ideas
- relating to feelings
- waiting, sitting still
- answering "what if" questions

- seeing the "big picture"
- not reacting to first impressions
- expressing their feelings
- considering the means as well as an end result
- working with an organized, divergent thinker
- accepting less than immediate answers or results
- considering others' points of view
- lowering expectations

Similar tables could be developed for the other three styles.

Therefore in accepting the cost band table above, the curriculum design scope for each using selected aspects from Herod's table, generates a number of possibilities in terms of informing curriculum design framework. The CS learning style can be argued to be the default design for pedagogic activities, i.e. responds to structure, clarity of outcome, efficiency, etc. The demands of entrepreneurship may not be ideal for someone with CS learning preferences, however, their role within a team and potential contribution to an intrapreneurial structure, while offering support to the rest of the team, could be key to overall success of any group. It is unlikely that a CS learner can drive the innovation, without clear pedagogic focus on stretching them which will add pressure to resources and move up the cost band structure.

Enterprise education continues to present many challenges for educators and administrators alike, for the former, the lack of experience in terms of developing and managing businesses continues to be a serious short coming of designing and delivering
effective entrepreneurial outcomes, while for the latter, creating an entrepreneurial ethos in the face of the historical soft funding environment has created a situation that requires extensive transformation. The changing financial arrangement at higher educational institutions in the United Kingdom and beyond, coupled to growing levels of graduate unemployment, has placed extensive pressure to deliver to concrete entrepreneurial outcomes for the students.

Conclusion

Therefore it can be seen that the role of the educator in entrepreneurship education falls a little outside the scope of traditional teachers. The nature of the nascent entrepreneur is formed by inner drive and moderated by the external environment; this can vary due to different geographical locations or economic imperatives. The teaching role then becomes one of facilitator. This will then have an impact on the 2 major challenges faced by the educator, firstly in pedagogy and curriculum development and secondly in organisational management and change.

Utilising Gregorc learning style delineators, educational methodologies and the cost bands outlined above as a reference base offers possibilities to model entrepreneurship learning by merging the above with both motivational drivers and informational roles to generate for each potential frame of reference not only profiles of relevant learners but informs classroom methodologies with the corresponding costing model. This then will allow not only for effective pedagogical development in both class room and group formation academia but also be based within a notional costing parameter. This allows for potentially a greater degree of success within the nascent entrepreneurial groups but also offers a strategic fit with the financial constraints within HE establishments.

References


2. ORGANIZATION OF SELF-DIRECTED LEARNING AS EDUCATIONAL INNOVATION IMPLEMENTATION IN THE ENTREPRENEURSHIP EDUCATION

Introduction

Economical and social changes in the European Union bring both new opportunities and problems. To achieve success in global economy and society, which is increasingly characterised by diversity, youth needs more diverse abilities more than ever so far. In this complex world creativity and the ability to learn and create novelties will be not less important (and maybe even more important) than knowledge of a certain area, which becomes out-dated quite quickly (KOM(2008) 425).

European Commission noted (2007) that considering tasks raised in the 21 century and wishing to increase welfare, it is necessary to follow new approach, according to which citizens are given enough opportunities to realise themselves, study, work, get health and social protection services, alongside with endeavour of solidarity, social cohesion and sustainability.

In the conclusions of the European Council (2007/C 282/12) it is stated that children’s achievements during compulsory education have significant direct influence on their social activeness, further learning and salary in the future.

As stated in the Communiqué of the Commission (KOM(2008) 425), there is an increasing tendency to change curricula so that learners are provided with more possibilities to acquire knowledge, skills and approaches which would be valuable for them in life situations.

The Communiqué of the Commission "Rethinking of Education" (KOM (2012) 669) identifies universal and key abilities. Enterprise is mentioned among most important ones. To acquire abilities learners have to learn how to learn from early years; i.e. critically assess their learning aims, observe self-discipline while learning, work independently and cooperate, if necessary search for information or help, use all possibilities provided by modern technologies, self-develop creativity and civic abilities (KOM (2012) 669).

Responding to challenges of the contemporary society, the authors created an innovative authentic system of (self-)education “Learning for Life”, orientated to self-directed learning, developing skills and approach that are necessary seeking to suitably create, apply knowledge and develop positive attitude towards further learning, critical thinking and creativity.
The created system “Learning for Life” responds to the conclusions of the European Council (2009/C 119/02), delegating to improve quality of education and teaching and efficacy, creating quality, efficient and impartial systems of education and teaching. The fourth strategic aim orientated to enhancement of innovation and creativity, including enterprise, at all levels of education and teaching coheres with principal approaches of the system “Learning for Life”, orientated to creation of innovative knowledge, which are based on consolidation of creativity and enterprise abilities.

The authentic system of education, based on self-directed learning, is developed on the grounds of value-based interdisciplinary learning, which encourages systematic thinking and learning. It is based on such key principles and values like fairness, impartiality, tolerance, self-directedness and responsibility, personal experience. All of it helps to develop education for sustainable development.

In the scientists’ researches enterprise is analysed in various aspects ranging from purification of the concept (Drucker, 1985, Timmons, 2003, Kirby, 2004, Lydeka, 1996), distinguished traits and characteristics of enterprise (Cromie, 2000, Henry ant etc., 2005), disclosed abilities (McCarthy, 2000, Raffo, 2000, Garalis, Strazdiene, 2006) to enterprise as a process (McMullan, Long, 1987, Timmons, Spinelli, 2003, Heinonenm Poikkijoki, 2006). Scientists pay a lot of attention to aims of enterprise development curricula (Solomon et al., 2002, Henry and etc., 2003), applied teaching methods (Rae, Craswell, 2000, Johnes, Spicer, 2006). It is emphasised that effective development of enterprise is receptive only on the plane of the learning paradigm where learning environment corresponds to the contemporary world of business and to achieve this it is necessary to apply non-traditional methods of teaching/learning that create possibilities for learners to practically perform various enterprise assignments.

Currently business simulation technologies are often employed, providing the possibility for learners to achieve results with minimal time input participating, observing and engaging in business creating processes, simulating work situations of real business environment. Conducted studies related to usage of such technologies emphasize episodic endeavour of results, refusing holistic development of abilities (Strazdiene, 2009).

Currently particular emphasis is put on adults’ rather than children’s learning because namely adult learning is the basis of the conception of lifelong learning culture (Knowles, 1983). There is a lack of studies describing manifestation of children’s and adults’ learning culture in various environments, the necessity of these cultures as tantamount ones, enabling to understand the person’s learning throughout life as a multicultural phenomenon.

According to K. Rudyte (2011), although in Lithuania children’s learning culture is grounded on the learning paradigm, “everyday education is further dominated by pedagogical conservatism” (Bitinas, 2005). Thus, it means that anyway the adult is prioritised. In the presence of such discourse on learning prevailing in the pedagogical reality, it is particularly relevant to create children’s learning culture, which also implies in itself children’s self-directed learning culture. And in this context, it is important to create culture that is receptive for enterprise development.

The authentic (self-)education system, grounded on self-directed learning, creates conditions for learners to self-develop the ability and need to take responsibility for both the results of their activity and its process from its initial (raising of the aim) to its final stage (assessment of obtained results).

Aim. To ground the (self-)educational system receptive to enterprise development, based on self-directed learning.

Methodology. The basis is concepts and theories of self-development of enterprise that describe enterprise as a person’s way of thinking (Weshead et al., 2000 from Strazdiene, 2009) and constructivism theory, which is orientated to effective activities (Sahlberg, 2005), according to which the person himself/herself constructs personal learning situation in which he/she can learn best because learning is based on search for a sense, which requires to understand the whole as well as its separate parts. This raises the aim of learning: to construct a peculiar understanding but not to memorise correct answers or reconstruct somebody else’s understanding.
Based on pragmatism theory (Dewey), it is perceived that the essence of life is in the activity, which provides with experience and enables to solve problems based on previously acquired experience. It is acknowledged that enterprise is most effectively developed through experience.

**Methods.** Content analysis, which enabled to ground the (self-)educational system receptive to (self-)development of enterprise.

### Methodological grounding of (self-)development of enterprise, Based on self-directed teaching/learning, orientated to innovative solutions

Social-educational discourse on learners’ self-directed learning as a phenomenal phenomenon is determined by two cultures. One of them is the discourse grounded on the educator and his/her culture, and the other, orientated to experience of the learner as an active participant and means contextualisation of phenomena of the learning process. It is expressed by these theories and approaches:

- **The theory of the paradigm shift.** Culture of school age pupils’ self-directed learning which is receptive to (self-)development of enterprise is a new socio-cultural, educational phenomenon, which cannot be explained in the presence of prevailing paradigms representing traditional philosophy. In another case they would imply universal knowing, these single and true learning practices, levelling otherness of children’s learning. The paradigm shift reflects the socio-cultural, educational shift, when universal knowing is refused. This enables to view the learner as different, unique and to cognize, observe and organise his/her learning process as a socio-cultural, educational act in the creative context. Therefore, the theory of the paradigm shift gives a sense to phenomenological and social constructivist perspective and to “liberal” education approach, which are applied for creation of children’s self-directed learning culture receptive to enterprise (self)development.

- **Hermeneutics (social constructivist and phenomenological perspectives).** This enabled the analysis of children’s self-directed learning culture receptive to enterprise (self-)development and deeper perception of its sense. The sense is interpreted with the help of the hermeneutic circle model, which expresses the link with the totality (Habermas, 2002; Ricoeur, 2001).

- **The phenomenological perspective** presupposes the approach that children’s self-directed learning culture as cognition of the socio-cultural phenomenon transfers from the “natural” approach to “phenomenological”.

- **Social constructivism** as a perspective of hermeneutics is suitable for explaining organisation of children’s self-directed learning culture, educational process as a sociocultural, educational phenomenon, which is the area of everyday life. This approach enables to understand that children’s self-directed learning, receptive to development of enterprise abilities, takes place in the context of sociocultural processes; i.e., is influenced by values, belief, general culture and social, cultural groups. In this perspective children are positioned as (inter)active creators and not only “consumers” of existing culture and its products.

- **The “liberal” education approach.** It is maintained that being free the person who is learning meaningfully accepts challenges: commits himself/herself (i.e., takes responsibility for learning) to (re)construct knowledge according to individual experience and through social interaction “goes deeper” than his/her individual experience. All of it is particularly relevant developing enterprise abilities where learning is explained as a process taking place in the diversity of individualisation and sociality conditions. As a result, (self-)development of enterprise takes place when in learning processes individual experience and the social situation determine how the person perceives reality; therefore, learning partially means organisational processes taking place in the “worlds” of senses.

- **The perspective of learners’ teaching/learning culture.** The basis is the approach that the learner’s culture means that they can be/are not only consumers of culture but also its active and creative creators, where the feelings of proactiveness and enterprise mean the person’s ability to turn ideas into actions. In this respect pupils are active...
sociocultural actors (and not the influenced ones), creating together with the adult and actively managing their learning processes and not only simply taking over what according to adults is correct and necessary. While participating pupils create teaching/learning culture (in this case of enterprise, grounded on self-directed teaching/learning), which is understood as a result of active actions and interpretations (Sommer, 1994, qtd. in Hviid. 2005).

- Pupils’ ways of learning applied by adults are not suitable for children because they ignore the child’s nature. It is particularly important for pupils’ teaching/learning culture that they should be provided with unrestricted teaching/learning environment, which is treated as the beginning of their enterprise. Researchers analyse freedom of action and proactiveness, which presuppose favourable conditions for children to express themselves, experience surprises (Seefeldt, 1992; Gullov, 2005). Namely proactiveness enables to perceive that children in the processes of creating learning culture are not beings that make mistakes, who should always be “corrected” and taught, but social, cultural individuals who have creative, enterprise powers (Seefeldt, 1992).

The article is grounded on the approach that enterprise is the way of thinking, personal traits and abilities, enabling to apply possessed knowledge in practical activities. The demand for novelties, proactiveness, self-confidence, the ability to raise and successfully implement innovative ideas, persistence seeking aim, the ability to risk wisely, responsibility, the ability to take risk for made decisions, leadership, endeavour to be independent, critical thinking, the need to seek, creativity, etc. in various sources are named as traits and abilities relevant for enterprise (Geciene, 2003; Turner, 2005; Poskiene, 2006; Strategy of Developing Economic Literacy and Enterprise, 2006).

**Theoretical grounding of self-development of enterprise, Based on self-directed learning, orientated to innovative solutions**

The system that is handy for (self-)development of enterprise, grounded on self-directed learning, orientated to creation of innovative knowledge, encourages the child’s proactiveness, which means his/her freedom of action and personal responsibility for decisions and actions. Responsibility in this context is perceived not as punishment or accountability but as acknowledgement of the child’s possibilities to act responsibly and independently and his/her empowerment. Personal responsibility in the context of self-directed teaching/learning is related to planning of the learning process, foreseeing and choosing resources, implementation, choosing suitable learning strategy and self-assessment. Thus, self-directed learning is related to the perspective of personal growth and in the broad sense it is defined as a process, distinguished by personal initiatives, identifying learning needs, formulating learning aims, choosing learning resources, implementing learning strategies and assessing learning results. All these abilities are named as abilities necessary for enterprise competency. It is likely that having mastered these abilities still learning at school, later the person will use them in a more quality and effective manner and improve them in professional and personal activities.

Acquisition of these abilities is facilitated by the (self-)educational process organised on the basis of the following principal approaches:

- organisation of the (self-)educational process according to the need, refusing traditional attitude to the pupil’s and teacher’s activity, succession, time, place of sessions etc.;
- increase of the very learners’ understanding about their own role in learning;
- emphasis on the learner’s personal interest, giving a sense to learning;
- provision and development of pupils’ choice possibilities;
- bigger tolerance to doubt and risk, not raising strict requirements to learners and not emphasising weaknesses, because it is much more beneficial for the learners to achieve aims that are important for them and that will later be incorporated in the teacher’s aims;
- development of pupils’ reflection on their learning;
- marking of achieved learning progress;
- cooperation with the teacher, identifying terms and other regulations of performing learning assignments;
- (self-)development of such abilities as projection, questioning, classification and generalisation;
- improvement of quality of the process, encouraging learners to use authentic learning strategies, perceive that everyone’s exceptionality is an advantage; this creates conditions for bullying prevention and non-discrimination;
- pupils’ empowerment to have their own attitude to the assignment and create that attitude in different ways using different strategies;
- integration of essential approaches and elements of self-directed learning into the process of teaching/learning all subjects;
- organisation of the learning process in various educational centres.

The (self-)educational system, which on one hand, emphasises every pupil’s uniqueness, empowers to individualise the teaching/learning process and on the other hand, encourages to raise one’s learning aims in the context of general aims of the subject, topic, group/class, creates favourable preconditions for the person to learn to analyse the existing situation in labour market and the world of activity, identify areas that are favourable or receptive to business, and relate this to one’s individual, unique experience, knowledge, abilities, etc. Besides, it encourages self-confidence, activeness, teaches to create new knowledge, which is also relevant searching for new activity, business niches or opportunities. All of it approaches real life, activity world situations to teaching/learning (self)educational curricula/plans.

Meanwhile the traditional teaching system, characterised by the teacher’s activeness in all stages of the teaching process, limits such opportunities of pupils, leaving them mainly the role of a performer in the teaching/learning process.

The system of self-directed learning is grounded on principles of autonomy, independence and individualisation, which in the context of self-directed learning are also identified as fundamental values of such learning. This presupposes the importance of considering every learner’s sociocultural differences in the self-educational process. The latter approach of self-directed learning is particularly significant seeking to avoid manifestations of discrimination in the learning process. Simultaneously self-directed learning ensures learners’ right to independence.

The conception of self-directed learning is grounded on the following learner-centred approaches:

- to be able to cognise oneself (respect one’s uniqueness, needs, interests and assess all of it objectively);
- to be able to acknowledge “other” and respect them (not to discriminate them by one’s actions);
- to self-develop a dynamic approach to the surrounding world and be able to respond, initiate changes in the society (it is important to perceive that the world is constantly changing);
- to perceive reasons and consequences of one’s actions, decisions;
- to be able to use all personality potential (employing it for creation of personal and society’s welfare).

The system of self-directed education, orientated to innovative solutions, encompasses the following essential principles of its organisation and implementation: the principle of relevance to the society and the pupil, of value to further learning and work, accessibility and applicability, cohesive development, innovation, acknowledgment of individuality and tolerance, interactiveness, succession. Some of these principles are emphasised in documents regulating (self-)education in the comprehensive school (General Curricula of Primary and Basic Education, 2008). Some of them are particularly relevant developing enterprise, enterprising personality:

- Of relevance to the society and pupil. The curriculum implemented on the basis of the self-directed (self-)education system, orientated to innovative solutions, has to help the pupil to cognize himself/herself and others, find answers to the key questions of the man’s life, take over the foundations of culture and knowing. This creates a possibility to organise the curriculum so that it encourages pupils to think over the diversity of cultural
heritage of their country and the world (including of the world of business, work), universal values and the necessity to preserve and nourish them, self-develop respect to culture of one’s country and tolerant attitude to people’s physical, religious, social, cultural differences. It must facilitate the pupil to become a thinking, active, creative and socially responsible society member, who is ready to learn all his/her life, develop and contribute to the improvement of the society.

- Of value for further learning and work. Based on the self-directed (self-)education system, the curriculum is chosen so that that it is related to life of the pupil, his/her family, community, develops the pupil’s ability to communicate and cooperate, solve problems, work in a group or team, take the leader’s role, ground relationships with people on mutual understanding, constructively solve conflicts. To achieve this general curricula can contain integrated topics that are receptive for (self-)development of enterprise abilities.

- Of cohesive development. The system is based on approaches of cohesive development of the society. Interdependence of natural environment, culture, social and economic life of the society, future orientated creative thinking, every person’s active participation creating quality life for oneself and for future generations are emphasised. Namely these approaches are among basic ones, assessing the already existing and creating new business branches, searching for possibilities to ensure economic progress and sustainable environment, economical use of resources, etc.

- Of innovation. Based on innovations of organising the educational process, innovative teaching/learning methods, systematic innovations are implemented. Because the educational process is orientated to making innovative decisions, new knowledge will be created in the learning process as opposed to reproduction and repetition of information. This encourages innovativeness and creativity of the personality, which is particularly important in (self)development of enterprise of youth.

- Of acknowledgement of individuality and tolerance. The essential methodological approach of the system is cognition, acknowledgment and appreciation of every child’s individuality, particularly manifestation of his/her individuality in the teaching/learning process, that is why various learning strategies are studied, their personal, individual conventionality is emphasised. Based on this approach, acknowledgment of manifestation of every child’s individuality in the teaching/learning process (different learning styles, different learning strategies, etc.) and organisation of the teaching/learning process both determine the possibility of eliminating stigmatisation, labelling, discrimination, bullying and other negative phenomena in the educational process and provide with favourable conditions for every learner to manage his/her learning process. In this context one’s own learning progress, individual learning pace, content, etc. become important for every learner. These abilities are among key abilities of the enterprising personality. This way otherness, individuality of applying the said system turn into an advantage rather than a shortcoming. On the other hand, the ability to cooperate seeking common teaching/learning result, working together, etc. develops team work, communication and cooperation abilities.

- Of interactiveness. The self-directed (self-)education system provides with the possibility to learn cooperating, accumulating and reflecting on one’s personal experience, integrating it, supplementing it with experience of other, not only direct participants of the (self-)educational process (i.e., teachers, peers, and also parents, various people of other social groups, who are present or absent here and now). Interactiveness is particularly important for self-development of the learning competency because it expands perception about the search for information sources, selection and reliability, creates possibilities to acquire many practical abilities and skills. In today’s society these abilities are relevant both for business representatives and in general specialists of any profession.

- Of succession. Self-directed learning enables creation of particularly favourable conditions to perceive importance of meaningful learning for the learner; the learner is learning to find that meaningfulness (sometimes very individual); this, in turn, encourages succession of applying self-directed learning because having felt the benefit and sense of learning, the learner wishes to continue such learning further on. Besides, application of
various interactive and innovative learning strategies encourages cooperation, information exchange, involving various groups of school community into the learning process or even stepping over school limits, further enhances motivation to continue such learning, versatile assistance and support.

Thus, the self-directed learning system is significant both for the learner and the society. The benefit of self-directed learning for the learner (individual level) could be described as the wish to learn, openness to changes and novelties, the ability to solve problems, self-control, etc. Such learners are curious and want to try out new things, they view problems as challenges, opportunities, seek changes, like to learn. They are motivated and persistent, autonomous, self-disciplined, self-confident and goal-directed. Such learning ensures learning motivation: pupils understand its importance and when they receive support in learning, the process of education evokes more pleasure and positive emotions both for the teacher and the pupil. Self-directed learning processes give a sense to the ability to project and choose suitable teaching/learning strategies, manage teaching/learning processes, etc. This determines acquisition of both skills relevant to enterprise and effectiveness of the existing, currently organised (self-)education process; i.e., new quality of (self-)education results can be obtained during the same time spared for general (self-)education, regulated at the national level, with little additional time input for preparation to implement this system and material and human resources.

New quality could be also treated as benefit to the society (state) (national level). These learners are more effective learners and members of the social community. Besides, a closer and more efficient link between the school and the community is ensured because promotion of such pupils to write diaries about learning, create portfolios of learning results, reflecting development of their competency, etc. initiate search for ways how to involve people in the dialogue beyond school limits (the internet, e-mail, actual life), how to help pupils to find ways to observe (directly and indirectly) something or an activity that they are learning, etc. These learners demonstrate the ability to search for information in complex texts, use various strategies seeking goals and submit ideas in various forms (drawing and writing). Morrow et al. (1993) noticed that suitable planning and implementation, self-directed learning can promote learners to create their own rules and leadership.

Conclusions

The innovative system of (self-)education “Learning for Life”, orientated to self-directed learning, developing enterprise skills and attitude, necessary for suitable creation and application of knowledge and for development of positive attitude to further learning, critical thinking and creativity, responds to challenges of the contemporary society and essential European and national dimensions of education and upbringing.

The system of (self-)development of enterprise, orientated to innovative solutions, is implemented on the basis of these methodological approaches: theory of the paradigm shift, hermeneutics (social constructivist and phenomenological perspectives), “liberal” education paradigm, the perspective of learners’ teaching/learning culture, enterprise as the way of thinking.

The authentic system of education, based on self-directed learning, is developed on the grounds of value-based interdisciplinary learning, which encourages systematic thinking and learning. It is based on such key principles and values like fairness, impartiality, tolerance, self-directedness and responsibility, personal experience. All of it contributes to development of enterprise and simultaneously of education for sustainable development.

The authentic (self-)education system, grounded on self-directed learning, creates conditions for learners to self-develop the ability and need to take responsibility for both the results of their activity and its process from its initial (raising of the aim) to its final stage (assessment of obtained results).

The system of self-directed learning, orientated to innovative solutions, encompasses such essential principles of its organisation and implementation: the principle of relevance to the society and the pupil, of value to further learning and work, accessibility
and applicability, cohesive development, innovation, acknowledgment of individuality and tolerance, interactiveness and succession, which are particularly relevant developing enterprise and enterprising personality.

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3. LEARNING TO BE ENTREPRENEURIAL IN VOCATIONAL TEACHER TRAINING

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Abstract: Being entrepreneurial is a concept which has aroused interest in connection with entrepreneurship education. It is a desirable quality not only among people already in working life but also among students, teachers and learning organizations. Teachers are a group who by their own example can serve as a model for others. By their own entrepreneurial example teachers can encourage their own students to be entrepreneurial. Thus it is appropriate that an entrepreneurial approach be purposefully learned, also during teacher training.

Observations of the entrepreneurial approach of two groups who began their studies at HAMK were initiated in August 2011. Instead of the normal teacher-led training the groups of students were divided according to the tenets of Problem-Based Learning into small groups and each group was assigned the responsibility for the independent planning, implementation and evaluation of studies pertaining to vocational teacher training. The task of the instructors was to monitor operations and to intervene only when necessary. In the reactions and development of the students there could be discerned the phases of the risk pedagogy model proposed by Paula Kyrö - confusion, taking action and learning to take risk.

The students in the groups responded twice to questionnaires addressed to them. The first questionnaire was implemented at the commencement of studies and the second at the end of studies. It can be stated in summary that in the early stage the students were confused, and partly also angry. Taking action, however, yielded results and the prospective teachers realized that they had coped with the challenges. Eventually in the course of implementation there actually emerged competition as to which group had achieved the highest quality implementation. Thus through experiences of being teachers the prospective teachers also learned matters pertaining to being entrepreneurial, such as responsibility and risk-taking.

The purpose of this article is to describe the story of the growth of prospective vocational teachers. First we present the key concepts used in the research. Thereafter we describe the studies of the prospective teachers as a whole. Next we introduce the prospective teachers’ and instructors’ experiences of the implementation phase. Finally we both draw conclusions about the implementation and endeavour to stimulate discussion on the further development of entrepreneurial education.

Keywords: Entrepreneurial learning, problem-based learning, vocational teacher education.

1 Professional Teacher Education Unit.
2 Professional Teacher Education Unit.
3 Professional Teacher Education Unit.
4 Professional Teacher Education Unit.
1. Introduction

The interest of man with equipment that can assist in making decisions and solving problems is longstanding. Nowadays it is certain that the computer has become a very present factor in the daily routine of the citizens in the world. Their integration into our daily lives and the technologies associated with it, especially the Internet, has been showing a steady growth rate. Increasingly there are new instruments that can be used as teaching tools in our schools, one being the computer and some tools associated with it. With widespread access to the computer, the use of internet was gaining ground as the natural environment for the use of programs, applets, social networks, among many other tools in widespread way. Living in the twenty-first century, the integration of technology in pedagogical activity is, in our view, a new reality that we begin to live and adapt to it. It’s a little difficult sometimes this adaptation because many teachers were born in a different time and they learned to construct knowledge differently from what the current generation does.

The focus of this work is centered on the teaching of geometry and considering the importance of learning of geometric concepts, we propose the use of the Google Earth software in that it allows the use of new teaching strategies, allowing a healthy relationship between learning certain concepts of geometry, the day-to-day lives of students and use of technology in the classroom environment. Google Earth is a program that allows you to view images of the planet, places, land, buildings and even some streets, directly, on the computer. All content is represented with geographical satellite images made by bringing the faithful representation of how points are determined in our planet.

The visualization is done through a virtual globe, which can be accessed anywhere in the world for information about places, buildings, lands, cities, landscapes, and their characteristics. As in [2] and [3],

"(…) Google Earth can help you bring a world of information alive for your students. It can be used with all grade levels, and the possibilities are endless with your imagination (…)".

We present a set of proposals to implement with young students (elementary school, (years 6-10)) and we understand that these tasks are appropriate to the teaching and learning of geometry at this level of education in Portugal. The big push for the tasks proposed in this work was in the activities that were presented in (Karen et. al, 2012), where we find a proposal for the
teaching of plane geometry using this software, which was developed at a public school of state of Rio Grande do Sul, in Brazil.

Google Earth can be useful to teach some subjects in mathematics. In [4], we can find a proposal to teach area and perimeter using Google Earth, among others.

The following section is dedicated to expose some theoretical elements that underlie our work.

In Section 3 we present a set of tasks appropriate for young students (elementary school, years 6-10), with a possible implementation in the classroom environment.

We conclude with a discussion regarding this work, manifesting our opinion in relation to the proposed tasks.

2. Theoretical Foundations

The challenges of change we face today in education are not sometimes easy to overcome, as already stated by N. Davis in 1999 in a very interesting article about the use of technology in education (Davis, 1999).

Nowadays, we have to be prepared to change our teaching methods and provide increasingly supportive environments for students in order to use new technologies. In recent decades much has been inquired about the relationship between resources and technological development / learning of Man and many believe that the use of technology should start very early. According to (Júnior et al., 2010),

“(...) The introduction of new technologies in the classroom promotes the opening of a new world for children and young people. (...)” (p. 87).

Moreover, according to (Vilatte, 2005), students are more motivated for information technology, and less to traditional teaching methods. Paraphrasing (Gomes et al., 2012),

“(...) It is extremely important to learn to use and use new technologies in the context of the classroom, from the earliest years of schooling (...)” (p. 260).

At school, the technology should provide knowledge, innovating. Innovation is spurred by technology and creativity is closely linked with the invention and innovation, creating something new and different from the usual. The concept of creativity is complex, multifaceted, hence this whole existence, in literature, of a wide variety of settings to assign. Although it is unquestionably your very important role in the world around us and in particular in the educational field, in which creativity should be developed and promoted. The contemporary world requires creative teachers form creative students. According to Wechsler (2001, 2002), cited by (Alencar & Oliveira, 2008)

“(...) A creative teacher is one who is open to new experiences (...) works with idealism and pleasure (...) breaking paradigms of traditional education” (p. 207).

Creativity in the contexts of pre-school education and elementary school, (years 6-10), is one of the first contacts with the child’s school environment. According to Chagas (2005) cited by (Gontijo, Simone, 2009),

“(...) Some aspects to be followed by teachers (...) and that might encourage a positive atmosphere and creative classroom (are): to make learning a fun time, (...) to empower and to encourage students to become active learners and responsible by activities, (...) to make the classroom in a comfortable and stimulated ambient (...) to use the real life to learning.” (p. 92).

Following (Martins, 2008),

“(...) The taste for mathematics is more easily developed if it derive from real-world problems, thus, arousing the interest of those who will study it, (...)” (p. 23)
Therefore, we decided to use every day problems to teach mathematics, providing teaching mathematics so playful and applied. Thinking in these aspects we prepare the tasks and we present them with the objective of trying to collaborate to develop their creative potential in order to be able to implement them and, themselves, be constituted as models of creativity for students.

3. Tasks to Propose

In this section we devote our attention to the exploitation of tasks involving the use of Google Earth software in teaching and learning of some geometrical concepts that can be implemented with students of elementary school (years 6-10).

We begin by selecting aspects of curricular goals that can support these proposals.

CURRICULAR GOALS

According to the curricular goals of basic education and with regard to mathematics [1], all the study subjects are introduced gradually starting with a trial period and then moving into a phase of more abstract different content. It was thought in this procedure that we present some activities that can be implemented in the classroom in this level of education.

In order to contribute to the construction and manipulation of mental representations of objects in two and three dimensions and encourage creativity in students of elementary school (years 6-10), the following proposals seek to join mathematics and technology in order to establish a strong link between them, trying to make math more attractive for our young people.

In the tasks that we suggest, is set (in each of) the following elements: task title, a brief summary of the situation being treated; description of material support for its implementation, a brief outline of how the teacher can manage the task; curricular goals that can be achieved with the task.

DESCRIPTION OF TASKS

With the tasks that we present, we try that the notions of measure and geometric notions of point, line segment, straight line and some geometric figures to study, are introduced sequentially, beginning with a survey of a prior knowledge related to these notions and after moving to a different phase of more real content to its application in real life settings. At the end of each task, we present a summary of some of the curricular goals we think to achieve with its implementation.

Task 1: Exploring questions about point, straight line, and line segment.

Situation being treated: Activity based on survey of previous knowledge.
Support material: Paper sheet; writing material.
Development: The teacher distributes each student a sheet (that he prepared before) containing questions on which they will have to write the words of point, straight line or line segment, according to the similarity identified by students alongside expressions that describe objects that students visualize daily. As an example, the teacher can ask the students to put the correct word on the right side of the object that we have in the following table:
Some curricular goals to achieve: to identify points; to identify line segments; to identify points of the line segment; to identify extremes (or ends of the line segment); to identify straight line.

Task 2: Identification of geometric shapes in everyday objects.

Situation being treated: Activity based on survey of previous knowledge.

Support material: Paper sheet, writing materials and various objects of our everyday lives.

Development: The teacher distributes to each student an object and asks the student to observe and perform a composition written describing the object and do the register, not only the geometric figures that in him can find, but also the classification of these geometric figures duly justified. For example, in the following figure we have regional sweet box (also used in (Catarino et al., 2012)) with the form of an hexagonal anti prism, where we can observe one of the geometric shape that we learn in this level of education (the triangles).

![Sky with stars]

Object: Sky with stars

Corresponding word to chose: point; line segment; straight line

Justification:

![Portion of thread stretched between the fingers]

Object: Portion of thread stretched between the fingers

Corresponding word to chose: point; line segment; straight line

Justification:

![Road edges]

Object: Road edges

Corresponding word to chose: point; line segment; straight line

Justification:

1 Image from the link http://1.bp.blogspot.com/-M4ICP8Xx50w/UH62kU7c3cI/AAAAAAAAChg/1u08Tc1Q5M/s400/Ceu_estrelado.JPG
2 Image from the link http://www.saudeemedicina.xpg.com.br/imagens/fiodental2n.jpg
3 Image from the link http://3.bp.blogspot.com/_QZB2Rk3USfM/TRVZGslhQpi/iAAAAAAAACgI/1u08Tc1Q5M/s1600/Buenos%2Bayres%2BI%2B078.JPG
Some curricular goals to achieve: to identify triangles, rectangles, squares;

**Task 3: Discovering Google Earth.**

**Situation being treated:** Activity based on exploration of the software (knowledge of the software and its applications).

**Support material:** Paper sheet; writing material and computer with internet connection.

**Development:** The teacher explains to the class, (preferably in a computer room), how we can use this software, explains that everyone can find addresses that can be viewed in various ways according to interests own. Then, each student, individually, (if possible, or in pairs), try to make use of the software in each computer, after the introduction to its exercise made by the teacher. Once you start this program the visual aspect of the computer screen is the following figure:

![Initial computer screen of Google Earth](http://www.baixaki.com.br/download/google-earth.htm)

Some curricular goals to achieve: To learn all tools in the Google Earth in order to use it without problem; to use the technology, exploring the software and the computer.

**Task 4: Discovering point, straight line and line segment with Google Earth.**

**Situation being treated:** Activity based on the use of tools in the Google Earth marking and connecting points (construction of knowledge about straight line and line segment).

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5 Image from the link [http://www.baixaki.com.br/download/google-earth.htm](http://www.baixaki.com.br/download/google-earth.htm)
Support material: Paper sheet; writing material and computer with internet connection.

Development: Individually or in pairs, the student(s) use(s) some icons available in the toolbar of the software, such as bookmarks (which enable the selected points on the satellite image); ruler (used to measure the distance and connect markers), among others. The teacher asks each student to use markers to identify points corresponding to addresses chosen to use the ruler to unite the forming line segments. Although this activity, the teacher can explore with students the description of the relative positions of two points for a third point by using expressions like: lies "on the left", "on the right", "is situated between ", etc. As a support of this activity, the teacher can also ask students to join non-aligned 3 points, 2 or more aligned, etc., exploring with their students the notion of straight line. The following figure is an example of how we can use toolbar of the software to select points:

![Image](http://4.bp.blogspot.com/-7_Fp81f8Tgc/UEFjL2uzclI/AAAAAAAACkR/15J4VwKop_8/s1600/Google+Earth.jpg)

**Figure 4 - points marked with Google Earth**

Some curricular goals to achieve: to report experience for location; to report experiences on the orientation in space; to recognize alignments using the look; to identify alignment of 3 or more objects (points); identification of an area as a "point" of space or "object point"; to identify line segments, identifying points of the line segment; to identify extremes (or ends of the line segment); to identify straight line.

Task 5: Measuring and comparing distances with Google Earth.

Situation being treated: Activity based on the use of tools in the Google Earth marking and connecting points to calculate distances between two points.

Support material: Paper sheet; writing material and computer with internet connection.

Development: Individually or in pairs, the student(s) use(s) some icons available in the toolbar of the software, such as markers (which enable the selected points on the satellite image); ruler (used to measure the distance and connect markers), among others. The teacher asks each student to use markers to identify points corresponding to addresses chosen to use the ruler to unite forming straight lines with a ruler and measure the distance between these points, also making comparisons between the distances of points to a given point. Also, in this activity, the teacher can, through the relative position of two points for a third point, explore with their students expressions like: lies "more closer", "more further", "a largest distance" "a shortest distance", etc. The following figure is an example of how we can use toolbar of the software to measure the distance and connect markers:

![Image](http://4.bp.blogspot.com/-7_Fp81f8Tgc/UEFjL2uzclI/AAAAAAAACkR/15J4VwKop_8/s1600/Google+Earth.jpg)
Some curricular goals to achieve: Visually to compare the distances of two objects (points) to a third (point) aligned with them, but not situated between them, since we can identify this alignment; to compare distances between pairs of points in more general situations; to compare distances using different objects and processes (pencil, feet, stretched wire, etc.); to determine the “length of the line segment” or “distance between points”; to identify line segments geometrically equal.

Task 6: Constructing geometric figures with Google Earth.

Situation being treated: Activity based on the use of tools in the Google Earth in order to construct of plane figures.

Support material: Paper sheet; writing material and computer with internet connection.

Development: Individually or in pairs, the student(s) use(s) some icons available in the toolbar of the software, such as markers (which enable the selected points on the satellite image); ruler (used to measure the distance and connect markers), among others. The teacher asks each student to use markers to identify points corresponding to their chosen addresses that use the ruler to unite forming plan geometric figures such as squares, triangles and rectangles, among others. In support of this activity, the teacher can also ask students to join non-aligned points, points aligned, etc., and thereby forming convex polygons exploiting various geometric figures that may arise. The following figure is an example of how we can use toolbar of the software to construct a triangle:
Some curricular goals to achieve: to identify triangles, rectangles, squares; to identify plan figures geometrically equal.

4. Final Remarks

The proposed tasks have not yet been implemented in the classroom environment, but we believe it will be challenging and rewarding, not only for the teacher as for the students. The teachers should always seek to update their knowledge and then they have to have the ability to choose whether or not to use technology in education. According to (Júnior et al., 2010),

“(…) despite the difficulties in the purchase of equipment, yet it is necessary to teach the teachers about the use of these technologies to the teaching / learning may be convenient. (…)” (p. 84).

It is not our purpose to obligate any teacher to take knowledge of all that relates to the use of technology in the classroom and its impact on teaching and learning of our young people. With this work we just want to promote and encourage the use of this software, for this level of education and show to the teachers how it can be enriching by the use of this software with students of elementary school, (years 6-10), and to motivate them for his use.

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5. TEACHING ENTREPRENEURSHIP AT NON-BUSINESS SCHOOLS: A REFLEXION

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1. Introduction

Entrepreneurship should be widely promoted and either education or vocational training should contribute to encouraging entrepreneurship, promoting the right mental attitude, awareness of career opportunities and business skills (European Community, 2003). These are two of the goals set by the European Commission for the promotion of entrepreneurship and higher education institutions sought to address.

Given that "entrepreneurship is a basic skill likely to be acquired through learning" (Kirby, 2002: 8), the university puts up the challenge of responding to the growing demand for training in this area. In this regard, entrepreneurship should be seen as a process that can be managed and learned (Gartner, 1985; Morris et al., 2001; European Commission, 2008). This process aims at the creation of new businesses or developing new business opportunities within existing businesses, being considered as a factor of development and competitiveness of national economies (Ussman, 1998; European Commission, 2004; Vyakarnam, 2005).

The creation of new businesses generates jobs, disseminates innovations and hence enables the emergence of new goods / services on the market, incorporates new techniques of management and marketing, creates wealth, facilitates structural adjustment and promote local, regional and national development.

In this context arises entrepreneurship education, which has become an important area of work, considering the increasing number of activities and courses offered in this area (Li, 2011). The universities, in addition to its classical tasks of teaching and research, should promote economic growth which means, among other factors, answering to the growing demand for specialized training in entrepreneurship domain.

In this communication we seek to reflect on entrepreneurship education in schools whose specialization is not management training. It is expected that training in entrepreneurship exists in management schools, but considering its impact on society it should be extended to other fields of knowledge and
therefore contribute to the creation of value and exploitation of opportunities in these other areas (Wadhwani, 2012).

2. Teaching Entrepreneurship

The entrepreneurship education can be approached in two distinct ways (European Commission, 2004; Sorheim and Rasmussen, 2006): a first approach, more specifically, is directed towards the creation of companies and therefore in the curricula of these courses / course units are emphasized matters relevant to the establishment and management of new firms. The second approach is more focused on the individual and aims to develop entrepreneurial attitudes and skills in the student. While the first approach is geared towards the company, the second is directed to the entrepreneur.

Recently, some authors (Jones and English, 2004; O'Connor, 2012) have argued that both aspects should be considered in entrepreneurship education, since business and entrepreneur complement each other. You need an entrepreneur to start a business, but its success depends on the theoretical and practical knowledge of the business and not just their personal characteristics.

2.1. Curriculum Development

According to Kourilsky (1995) the curriculum of a course in entrepreneurship must group three main components: (1) the recognition of opportunities, which involves identifying market needs still unmet and the creation of new goods / services that aim to cover these needs, (2) resource management, which also includes a market analysis (market factors), the ability to take risks and the technical and technological knowledge that enable the combination of the factors in the most efficient manner possible, and (3) creation and management of a business, which must be present in the curricula by simulating cases (preferably real) in order to provide the student learning in a real context. Here students will put into practice the taught knowledge in management, finance and marketing.

A similar approach is followed by Roach (1999), which states the following objectives for a curriculum of entrepreneurship: (1) knowledge of the characteristics of the entrepreneur, (2) identification of market opportunities, (3) basic knowledge to enable students to develop a business plan, (4) knowledge of the various entry strategies activity and (5) preparation and discussion of the business plan.

According to European Commission, 2008, entrepreneurship education programs at the higher education level (non-business courses) should allow (1) the development of personal attributes and skills inherent to entrepreneurship such as creativity, autonomy, leadership, team spirit, (2) enhance the self-employment as a career option, (3) work on concrete projects and activities, and (4) provide the necessary knowledge to start a business activity.

2.2. Teaching Methodologies

The entrepreneurship education is about learning for entrepreneurship, learning about entrepreneurship and learning through entrepreneurship (Ruskovaara and Pihkala, 2010).

Should not be understood only as cognitive knowledge about an area of knowledge but also about the ability to discover opportunities and master the processes of creation of new business initiatives (Li, 2011).

The teaching methodology should be consistent with the objectives of entrepreneurship education. Thus, it becomes necessary to combine theoretical knowledge on how to create and run a business with its practical aspects, being able to analyze the surroundings for the detection of business opportunities that
may arise and stimulate in the students the entrepreneurial behaviors mentioned above.

The teaching-learning process should also encourage and support embryonic ideas in order to implement projects well-grounded in previous studies, and finally reach the market (European Commission, 2008). To accomplish this goal, the process of teaching and learning should provide the student with an autonomy that usually is not given in the classic learning process. The student should be able to discuss their learning objectives, activities to implement the search for the necessary resources to carry them out, and to define, together with the teacher, the assessment methodology. This approach stimulates motivation, autonomy and decision-making.

Lectures should be reduced to the minimum necessary and teaching should be oriented to the resolution of practical cases, preferably real cases to be resolved in a team, in order to engage students in a business context, to provide them with a vision of the kind problems that may occur and alert them to its multidisciplinary nature. Teamwork allows to stimulate the abilities of cooperation and communication.

The teaching focused on solving cases also stimulates the ability of decision-making and risk once the student is called upon to decide in situations of ambiguity and incomplete information. Finally, this methodology of teaching allows students to put into practice both their intuitive abilities and their knowledge, ie, combines the intuitive with the rational (Kirby, 2002; European Commission, 2004).

Usually one type of activity required in all courses in entrepreneurship is to investigate a market opportunity and then to draw up the business plan for this activity that explore and evaluate this opportunity. This type of exercise allows combining theory with external environment and places students in a real context.

One question that arises in this approach lies in the fact that only a small minority of students being interested or have ever considered starting a business, then a large number of students do not consider this possibility and may face education to entrepreneurship as unnecessary and somewhat uninteresting (Li, 2011).

According to the same author, the methods used in teaching entrepreneurship are divided into two groups: traditional or passive (including traditional lectures) and innovative or active that relate to methods aimed at the implementation of activities.

Ruskovaa and Pihkala 2010 classify teaching methods in didactic, skills acquisition and discovery. The didactic methods are based on lectures and autonomous readings; methods of acquiring skills favor case studies, presentations and group discussions, simulations and development of projects ie, these methods focus on performing activities that effectively improve the effectiveness of student behavior.

![Figure 1 – Strategies for entrepreneurship education](image)

Source: Adapted from Rasmussen e Sorheim, (2006:187)
The discovery methods are based on the experimental teaching and aimed at "learning by doing", on an individual basis or on a network.

The use of various methods of teaching and learning aforementioned, depends both on the involvement of students, and the emphasis given to the individual or business idea on the course. Depending on these two factors, Sorheim & Rasmussen (2006) consider that entrepreneurship education can use the following strategies:

A course or program too focused on the individual and with a low level of involvement of students, one can hardly escape the classic method of teaching and learning. However, at present, the mainstream teaching of entrepreneurship emphasizes the creation of new businesses and requires greater involvement by students. Thus, the method of case studies is used in a first approach, moving later to develop concrete ideas with business potential.

3. Teaching Entrepreneurship: A Case Study

Making reference to an higher education polytechnic institution with 6 schools (one of management) we note the following situations in non-business schools:

<table>
<thead>
<tr>
<th>School</th>
<th>Number of degrees (undergraduate)</th>
<th>Number of entrepreneurship units</th>
<th>Contact Hours</th>
<th>Semestre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>5</td>
<td>4</td>
<td>45</td>
<td>6</td>
</tr>
<tr>
<td>Education</td>
<td>5</td>
<td>3</td>
<td>45-75</td>
<td>5/6</td>
</tr>
<tr>
<td>Technology</td>
<td>6</td>
<td>4</td>
<td>60-75</td>
<td>4/5/6</td>
</tr>
<tr>
<td>Arts</td>
<td>4</td>
<td>Seminars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>5</td>
<td>Seminars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>5</td>
<td>4</td>
<td>68-75</td>
<td>1/2/5</td>
</tr>
</tbody>
</table>

Figure 2 – Entrepreneurship teaching at a polytechnic institute: contact hours and teaching semester

The introduction of entrepreneurship training in various courses arises in the context of curriculum revision raised by adapting the Bologna treaty in academic year 2005/2006 and was supported by a European community funded project (project BiINNOVA) developed in partnership with several regional entities and comprised several activities promoting entrepreneurship.

One of the outputs of this project was the introduction of specific courses in entrepreneurship, which was sought to achieve in view of the said curriculum revision. These amendments came into operation in school year 2006/2007, not meaning that to date there were no courses in management or were entrepreneurship was referred.

This bet has proved strategic in the early days of the movement pro-entrepreneurship that has been seen in recent years in our country.

We present next a critical analysis of the dimensions that are involved in entrepreneurship education: the curriculum, the methods used, teachers, students and school / organization.

3.1. Analysis of Curriculum

The choice of the syllabus to teach seeks to integrate the theories mentioned above with respect to the components of an entrepreneurship course.

On the one hand, to explain the area, its importance for the individual and society (learn about entrepreneurship). Next to develop the tools and capabilities that enable the detection of opportunities (learning for entrepreneurship). Finally, the program also includes an approach to key management functional areas of an organization (marketing, finance and human resource management). This last aims to make the transition between design and business reality, realizing how students can put into practice their ideas.
In developing the curriculum students are expected to learn through undertaking, considering the study and activities as a journey where they have to make choices and decisions. This route is achieved by the choice of methodologies to apply discussed below.

A critical analysis of the contents reveals that these are very ambitious for the time available. It’s intended to speak of many things considered essential in the entrepreneurial context for which, taking into account the type of school (non-business) students lack the sensitivity and adequate prior knowledge. The entrepreneurship course aims exactly to address this situation.

3.2. Analysis of Teaching Methodology

The methodologies used in entrepreneurship education, in particular the experience of the authors in the context of an Agriculture are in line with the referred in the literature as being common options. The methods used are based mainly on lectures and business plan development.

The lectures are geared toward the presentation and discussion of basic concepts and tools that allow the minimum background for students to understand and develop their work autonomously.

As mentioned, the development of a business plan encourages students to apply in practice the route of identifying an opportunity, developing a solution and structuring and planning more adjusted to their implementation. In this activity should be noted that it is common to hear criticism from students that they don’t have the foundations for such an exercise. This finding reflects the fact that a business plan makes use of management language that can not be covered in depth in the academic time available. To remedy this situation we use a generic business plan template with questions for students to answer about their proposal, as well as directed readings on the topics needed and also individualized tutorial support.

Another situation which can be seen in the use of the business plan as a teaching methodology is the difficulty for students to develop projects in their area of knowledge / training. This seems paradoxical but results, we think, from the lack of experience and empirical knowledge that enable them to develop an initiative that responds to problems in their area of study. Should also be noted the lack of skills for develop of autonomous work and the difficulties of students at systematize different types of information and knowledge that are needed to implement the business plan.

Sometimes case studies are proposed for discussion and analysis, but also in the use of this method some difficulties arise. On the one hand (and again) the lack of management knowledge to enable them to in-depth analysis of the situation and on the other hand the difficulty in obtaining appropriate cases to the knowledge level of the students, and the national context and reality. Many of the cases available are developed in international contexts, based on big enterprises and large investments and developed in different social realities. These events give rise to situations of non-identification and then reducing the interest as a teaching tool.

It has been also used a experiential method in which students were asked to think and implement a business idea that could develop in a limited number of hours. Although this exercise was interesting from the point of view of entrepreneurship education, had some logistical and often of legality (the students developed activities requiring licensing) challenges that dictated its abandonment.

3.3. Analysis of the Training of Teachers

The teacher as a transmitter of information and knowledge and facilitator of the learning process plays an important role in education and especially in entrepreneurship education.
According to European Commission, (2011:3), "teachers play a key role since entrepreneurship education has to do with the skills to act entrepreneurial and thus, the encouragement of entrepreneurial attitudes and behaviors are more important than expertise on the management of a business."

In the context of entrepreneurship education two dimensions seem crucial: the training of teachers and uniformity in teaching approaches.

In the first dimension we must consider the academic training, the research developed in the area, additional or professional training and also the experience. What is the ideal profile?

The second dimension - uniformity of approaches, concerns pedagogical and scientific autonomy enshrined in the professionals statutes who leave the teacher freedom to define the way it deems most appropriate to achieve the training objectives. This can lead to, in the same institution there are different formations in entrepreneurship, as a result of individual visions of teachers.

3.4. Analysis of Student Profile

The profile of the students is also crucial in the equation of entrepreneurship education. Not forgetting the areas of education taught in non-business schools, it is expected that the basic knowledge and sensitivity to the business issues are not the deepest. This may explain the frequent comments: "we do not know enough for this ..." regarding the development of the idea and business plan. The mental image of students is that as they are not studying management they are not trained to think about business.

On the other side, and across all areas of training, students have personal stories, with different life experiences, sociocultural relationships and distinct family realities (especially with positive or negative experiences in business) that influence the proneness towards these subjects.

The challenge of entrepreneurship education is to get students to think about alternatives and solutions to problems in the markets and this requires the knowledge of the "world", which is greater as the familiarity they have with it and in it and the thirst for obtaining knowledge.

3.5. Organizational Analysis

The last dimension of reflection focuses on entrepreneurship education in an organizational context. In this case, at the school level and the options that were made in this area.

In addition to the existence of courses in entrepreneurship an important issue in organizational terms is the definition of the proper time for contact with this reality, that is, sooner or later in the curriculum.

Despite their various possible situations, it seems that a later contact could bring more advantages, since the greater maturity of the students, and the deeper contact they have with the area of study, which facilitates, for example their ability to identify opportunities.

Another issue, at organizational level relates to the promotion of interdisciplinarity, since an individual hardly undertakes alone (have to have contact and interact with other areas of knowledge), or a project will work with knowledge of a single area. The traditional organization of schools and courses promotes formative inbreeding, in the sense that the units are from that course and be attended by students of that course, thus preventing contact with different areas and visions.

It is also noted that entrepreneurship education does not occur in a predefined time, more or less long, but should rather be seen as a process that requires several steps. At the organizational level, the existence of parallel complementary activities on these subjects, like seminars and ideas competitions...
ate beneficial to strengthen and enable students to deepen their contact with these themes.

Finally, we note the importance of existence in the school of support mechanisms for students who want to implement their projects and the relational skills and resources that allow the integration into wider support networks, thus making possible the transfer of education in action, essential for entrepreneurial success.

Conclusions

Aware that there are multiple realities, in this article we aim to reflect on the key dimensions and problems about entrepreneurship education in non-business schools.

Still we have a long way to go and many opportunities to explore in this area in order to enhance the process and the outcomes of entrepreneurship education.

Based in our experience we raise some suggestions that seem relevant and worthy of further development:

• Focus and reinforce the importance of entrepreneurship for the personal development of the student (skills and attitudes) and the importance of entrepreneurial behavior as a key factor of success in a highly competitive labor market;

• Reduce the emphasis on creating new businesses but focus on identifying and exploiting opportunities (new or already existing) namely in the social and environmental sectors; it widens the spectrum of applicability and consequently the possible benefits to society;

• Create mechanisms for continuity of the projects developed during the courses; promoting joint projects, gathering resources to implement prototypes of products and services and providing tools for incubation can promote the success of the outcomes of entrepreneurship education in technical schools;

There are no magic solutions for the success of the teaching-learning process but gathering the five dimensions mentioned above (curriculum, teaching methods, teacher’s training, students and faculty organization) can make the difference.

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6. HIGHER EDUCATION AND DEVELOPMENT OF ENTREPRENEURSHIP EDUCATION IN PORTUGAL

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Introduction

This work aims to be an analysis of the characteristics of higher education and its adherence to the teaching of entrepreneurship. The Portuguese education system is considered inadequate for the development of this theme and may not, however, continue to ignore the increasing need, for, students to define their route in the light of entrepreneurship.

With this study, we intend to answer three questions:

1. Are the characteristics of higher education in line with the teaching of entrepreneurship?
2. To promote entrepreneurship is it enough a separate subject in the curriculum plan?
3. The methodology used in higher education is the most appropriate to motivate new entrepreneurs?

In order to answer these questions it was structured a work to enable reflection, analyzing existing literature on the subject, with particular focus on the characteristics and evolution of higher education, entrepreneurship and its teaching, concluding with a look back at what has been the development of this problem in Portugal. Intending a confrontation between different studies and its reflection they are a way for the presentation of clues that lead us to new approaches. Finally, and as a result of this analysis, we intend to point out some guidelines to improve the teaching of entrepreneurship and meet needs arising from new models of business development and of labour market.

Higher Education

Teichler et al. (1995, p. 120), in relation to higher education report that: "A certain conflict in the debate about relationships between higher education and employment is endemic: Whereas Representatives of the higher education system more often Do express concerns that higher education might be pushed too strongly by utilitarian pressures, external actors more frequently blame higher education for being too self-reflective, too much like an ivory tower, and too elitist."

When we talk about higher education we are forced to reflect on the two models that guided its development: the functionalist models and academic models. The first ones more focused on preparation for professional life they want a more specialized education and more connected to the needs of the working world.
Establish teaching as a connection to the world of work, defending the action-oriented specialization. Azevedo (1999) states that the term "professional" is generally referred to "set valuing learning processes while allowing the development of critical and reflective capacities, in order to gain independence from making and the action". As Mollen regards (1996), these traditional values of higher education are probably as important, if not more, than the economic and professional. Gago (1994) in a preliminary study carried out in Portugal states that the provision of training for graduates of higher education seems to focus mainly on institutions outside the education system, particularly in private companies and research training centres.

Changes in the labour world deserve more attention in the definition of scenarios about education in higher education than in the past Teichler (1996). We can say that "the balance between job knowledge and professional task it was found feasible while the University was not subjected to excessive pressures, and this will mean: while not too much opened . That's what has happened when the university finally and irreversibly was democratized over the last 50 years (Gil, 1999, p. 6). As Mollen regards (1996, p. 15), higher education throughout the centuries has always had concern with: teaching of arts and sciences; training for professions (including the academic professions), and research and scholarship.

Higher education should be seen as a community service attentive to individual needs and an organization focused in the educational and learning process of each person (Ambrose, 2001, p. 190).

As higher education objectives are pointed out the "educational development" (Barnett, 1994) or the "intellectual development" (Eljamal et al., 1999).

Educational development is implying greater involvement and assumption of intellectual positions. Intellectual development understood an increasing ability to use «thinking skills» to understand and reflect on relationships. This integrative or synthetic process of relating ideas differentiates the process of intellectual development from the prerequisite process of learning both content knowledge and the «skills» for effective thinking (Eljamal et al., 1999, p. 8).

According to Ambroso (2001, p. 180), "critical thinking, problem of creativity, interdisciplinary skills, communication" are in today's society, as or more important than the professional knowledge and scientific knowledge. In this sense, the existence more flexible and less constrained study programs by disciplinary boundaries assume a very particular importance, because "the role of university education, even the one of technology nature, should be to prepare citizens to solve complex and new problems that is, help him to think. (...) Above all, we must overcome the laziness of watertight behaviors and begin to think and teach in transverse and deep. terms " (Calado, 1998, p. 37).

For Barnett (1997-b, p. 139), we must recognize that "every profession has its distinctive knowledge base." Ambroso (2001, p. 54), that "after we privileged the act of learning, we do not separate the two issues: what can we learn and how to learn." What appears important to research is to connect the two issues: that is, the personal relationship with knowledge. In fact, according to Teichler (1996, p. 96), "the more demanding the occupational task the less can it be directly trained for," meaning that it is particularly difficult to prepare in a direct and mechanical way, for life and professional activity at the higher education level.

In this regard, Barnett (1994, p. 201) notes that "the term «higher education» has a conceptual weight of its own. It is not simply a sub-set of the concept of education, and it should not be assumed that our thinking about education in general automatically holds for higher education". The same author points out that "a genuine higher learning is subversive in the sense of subverting the student's taken-for-granted world" (Barnett, 1994, p. 155). This is because although capable of intellectual standpoint, future entrepreneurs should be aware of the uncertainty, whether cognitive or moral, for any action. Also to Teichler (1996, p. 97), at this level of education "graduates must be prepared not
just to take on tasks and to apply existing rules, but they must also be capable and motivated to question established practices and to cope with unpredicted work tasks; that is, they must also anticipate and press for innovations”.

To Calado (1998) any university education should prepare for the resolution of problems at the base help to formulate thought.

Higher education should proactively promote flexibility of individuals as members of a rapidly changing society (Conceição et al., 1998). Citing Barnett (1997-a, p. 41), “what are required are meta-abilities which enable people, both individually and collectively, to handle change, openness, conflict and uncertainty. There are two ingredients here: reflexivity and the power to go on reconstituting oneself – with others – through one’s lifespan.”

It is increasingly pressing the link between higher education and the labor market, through a dynamic and interactive process, having on one side the offer (skills) and on the other, needs. These can be felt by the knowledge of the offer and not have to be filled in immediately by a direct offer of training system (Ambrósio, 2001).

The student should be seen as the ultimate goal of higher education, understood in terms of learning and personal development, but not the knowledge, skills and abilities that students should learn, as it appears from the proposals of several authors (Barnett, and Eljamal Ambrósio). All this with the aim of, in terms of preparation for professional life, “giving the individual an understanding of social, professional and personal of what is the profession” (Ambrósio, 2001, p. 165).

Some authors (such as Barnett and Teichler) underline that this is especially relevant in the case of graduates of higher education, in the sense that these should not be limited to apply rules and execute tasks without a broader understanding of the context involved and the implications of their professional role. We must not forget that “il ne s’agit pas seulement de saisir en quoi l’univers de l’éducation ou de la formation est façonné par le travail et l’économie mais aussi de dégager la contribution de l’éducation à la structuration du marché et de l’organisation du travail” (Doray et al., 1995, p. 681).

Insecurity transmitted by the current scenario, economic and social imposes according to Barnett, “critical thought in relation both to the self and to the world has to be brought into play. A liberal education resting on critical thought solely in relation to formalized knowledge is no liberal education at all” (Barnett, 1997-b, p. 106).

**Entrepreneurship**

Existing a long time ago, the concept of entrepreneurship has different meanings not presenting a peaceful and unanimous consensus, although the relationship of entrepreneurship to business creation and innovative aspects appears to have the greatest consensus (Sarkar, 2007).

For Trigo (2003), entrepreneurship encompasses two aspects: on the one hand, an attitude related to the detection of new opportunities, and secondly, a behaviour, to the extent that the entrepreneur performs a set of actions to turn this opportunity into a business activity.

According to Cone (2007), entrepreneurship is to reinvent the world, where currently nothing is static.

For Drucker (2003), starting to be typically American, entrepreneurship has emerged due to changes of values, perceptions, attitudes, demographic changes and changes in education.

There are authors like Baron et al., (2008) for whom entrepreneurship should be seen as a process and not as an isolated event, identifying the following steps: recognizing opportunities (potential to create something new), decide to go ahead and gather the necessary resources proceed with the project, manage and develop the project making it a profitable business, reap the rewards of the
investment and possibly consider exit strategies, transferring the project to others. These authors also report that the process undertaken is because a number of individuals make a decision and act on it.

According Trigo (2003) the concept of entrepreneurship can be approached from the point of view of economists but also from the point of view of non-economists.

Economists consider the relationship of the entrepreneur with several aspects, such as risk and speculation (Richard Cantillon, 1725), coordination of productive services (Jean Baptiste Say, 1814), anticipation of future needs (Carl Menger, 1871) such as the uncertainty (Frank Knight, 1921), innovation (Joseph Schumpeter, 1934), the identification and treatment of imbalances (Israel Kirzner, 1973).

As for non-economists, several authors have attributed a set of features to the entrepreneur: DC McClelland (1961) emphasized the need for success; J. B. Rotter (1966) highlighted the internalized control; JA Timmons and Peter Drucker (1985) reported a calculated risk-taking; Sexton and Bowman (1985) stressed the tolerance of ambiguity, and, lastly, Bandura (1986) reported self-efficacy as a feature often present in business.

According to the Portuguese Society of Innovation in Project 2004 GEM, entrepreneurship is at the center of economic and industrial policy, covering both the creation of new businesses and the development of opportunities in existing organizations. That is, the entrepreneurship definition used is “any attempt to create a new business or new initiative, such as self-employment, a new business organization or expansion of an existing business, by an individual, team of individuals, or established businesses” (Portuguese Society of Innovation, 2004, p. 1).

According to Sarkar (2007), perhaps the closest definition of the concept of entrepreneurship currently used is that of Joseph Schumpeter; who states that the entrepreneur is who applies an innovation in the business context, and may take various forms, including: introduction of a new product, introducing a new method of production, opening a new market, the acquisition of a new source of materials supply and the creation of a new company.

According to Morris (1998, cit. in Sarkar, 2007), entrepreneurship is characterized as having seven perspectives: creation of well-being, enterprises, innovation, change, employment, value creation and growth.

We also can pointed out Drucker (2002, 2003) who considers that systematic innovation based on knowledge, is the main tool of the entrepreneur, through which he identifies an opportunity and exploits it to create a business or a different service.

For Sarkar (2007) innovation means a new idea, or sometimes it is applied to existing ideas in an original and effective way. For this author innovate implies explore new ideas, which are accepted in the market. For Schumpeter (1939) the definition of innovation is based on obtaining a new production function, as a new product, or a new form of organization, opening up new markets. Another definition of Schumpeter (1939, p.66) is as follows: “The introduction of a new product (or an improvement in the quality of an existing product), the introduction of a new production process (process innovation), the opening of a new market (in particular a new market for exports); a new source of supply of raw materials or semi-manufactured goods, a new form of industrial organization”. However, there is an important aspect, and it can sometimes be confused, is that innovation is not just about the great and good ideas, or innovation is not simply a synonym of inventing, innovation refers to ideas that have impact on the market (Sarkar, 2007). We can say that what distinguishes the entrepreneur inventor, is the ability to transform the invention into development through innovation, application, dissemination, implementation, institutionalization and production of large-scale effects, conquering fans and lasting, ie going from the plan to create social and economic repercussions.
Entrepreneurship Teaching

Someone with creativity and able to innovate, was in this way that Joseph Schumpeter (1942) characterized for the first time the entrepreneur. In 1967, K.Knight, and in 1970, Peter Drucker introduced the concept of risk. In 1985, Pinchot introduced the concept of intra entrepreneur: someone able to innovate within an organization.

It is noticeable that entrepreneurship starts with the innovative and creative spirit, is fundamental to shape the personality of each one, so that very early if foster these characteristics make it happen with enhancing creativity and motivation. In this context, school, institutions that promote education, living space, socialization and training, are the crucial agents in the construction of new experiences and knowledge. Being the responsible for the mission to train professionals in the light of the new political and economic scenarios, which require other references in the direction of the work and citizenship, it is crucial to implement a learning process based on the know-how and in the how to be...

Tavares (2003) emphasizes the importance of investing in higher education because it is there that we educate and train future professionals, also mentioning that it should foster a culture of responsibility and requirement in university courses. As regards Volkmann (2004), entrepreneurship education is important to the health of any university and to the economy of the country itself.

It was on the beginning of the twentieth century, that the entrepreneurship becomes important as an academic discipline in universities, not only in America but also in Europe (Volkmann, 2004). American universities were pioneers in the field of entrepreneurship education, and the "Harvard Business School" the first to introduce a course in entrepreneurship in 1947 (Volkmann, 2004; Araújo et al., 2005), but until 1970 few American universities offered courses in this area. However, since 1970 there has been a large increase in these courses and although predominate in the administration / management areas, have been also included in the areas of science and engineering (Araújo et al., 2005).

Studies conducted in Europe indicate that society has to value entrepreneurship, taking into account that can occur in any sector, not restricted to specific areas (European Commission, 2003). According Volkmann (2004), in late 2002, more than 700 entrepreneurship programs were offered in universities and management schools, primary area where entrepreneurship was promoted. Although this phenomenon has been started in the United States, subsequently has spread throughout Europe, starting with the UK and the Netherlands. However, countries such as Belgium and Germany were also not behind (Volkmann, 2004). Thus, according to this author at the beginning of the twentieth century entrepreneurship became an important academic discipline in universities, not only in America but also in Europe.

The entrepreneurship education is a complex process that has evolved in recent years and is increasingly supporting the idea of education systems which can help to promote entrepreneurship at all levels, from the first cycle of basic education to university (Commission of the European Communities, 2006). According to the Commission of the European Communities (2006), there are various guidelines to foster entrepreneurship in higher education, such as; the integration of this theme, transversally, in several disciplines and courses; adequate training of teachers and the establishment of networks, encouraging mobility of teachers between universities and the business world.

Being an activity with some complexity its study does not reveal itself with an easily approach, existing empirical studies that relate experiences of success and failure in different countries (Gartner et al., 1994).

Some authors conclude by analyzing entrepreneurship programs in Europe, that its diversity and quality is increasing (Garavan et al., 1994).
Is increasingly emphasized the need to implement entrepreneurship courses for students from different areas, getting very clear that trend of entrepreneurship education permeate all academic environments (Araújo et al, 2005, p.9).

Currently in Europe there are examples of good practice in education for entrepreneurship in higher education, the level of training of entrepreneurs in the field of engineering (Fleming, 2005; Levie, 2005), science, technology and management (Fleming, 2005) not without, besides teaching, need an environment that promotes entrepreneurship (Levie, 2005).

Levie (2005) states that entrepreneurship education has different effects on students, because if some find that this is the path they want to follow, others realize that this is a more complicated way than what they thought, so they feel a need for more training. Other also concludes that, in fact, they do not intend to undertake other variants of study related with management. Fleming (2005) refers that entrepreneurship education raises awareness in the youth options to create their own work as a career option, and motivates them to endure creatively more future opportunities.

The entrepreneurial intention of engineering students, according to several empirical studies, results of contextual factors directly and indirectly arising from personality traits (Franke et al., 2003). According the same authors the application of an entrepreneurship program creates attitudes and entrepreneurial intentions.

In this context, the inspiration related to the intention to create your own job proved to be the biggest benefit of the program (Al-Laham et al., 2007). It appears that entrepreneurship begins increasingly to be related to new areas where the concept of management is more or less familiar and/or remote (Heinonen et al., 2007). These authors show that the application of entrepreneurship programs in areas such as chemistry, physics, information technology, bioinformatics and medical sciences promotes the entrepreneurial spirit in students who are attending them.

It should be noted, though, through a case study, based on a psychodynamic approach, it was found that the life experiences of an entrepreneur are reflected in the strategic guidelines of his company (Kisfalvi, 2002).

Volkmann (2004) emphasizes that entrepreneurship is not something that is acquired at birth, something inborn, but is developed by education as by the experiences throughout life, which is in line with the opinion of the authors mentioned above.

How defend Ferreira et al., (2007), the thesis that the entrepreneur is the result of heredity, now seems not gather much consensus, to the extent that it is recognized that it is possible to learn to be an entrepreneur through the use of differentiated policies at education. The studies carried out have shown, even that educational preparation can increase the number of entrepreneurs. Sarkar (2007) also notes that, regardless of entrepreneurial traits are more prevalent in some individuals than in others, entrepreneurship can be promoted through an entrepreneurial culture which can contribute to the promotion of entrepreneurial skills, in relation to a process where inevitably will be present to entrepreneurship education at all levels of education.

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external environment, which includes culture, education and public policy, can be a promoter of entrepreneurship. Cooper (2010) states that the objective of entrepreneurship education is motivated by economic policy the university is a vehicle for the development of government policy, creating star-up and more able students for their development.

Cone (2007), stated that it is necessary to create a more consistent curriculum for entrepreneurship in higher education accessible to all students from all areas of education. Refers, too, that not all students will be (or want to be) entrepreneurs, but at least they should be familiar with the role and importance that entrepreneurship plays in the economy and society, aware of the possibility of being able to choose this path at some point in their careers, enjoying in the best way, what this has to offer.

Hynes (1996) emphasizes the importance of entrepreneurship education from the earliest years of schooling and in areas not directly related to the management, to the extent that often students from other areas have ideas, but then they do not have the knowledge management needed to develop and implement them in the market in a way consistently and effective. We can think of entrepreneurship education on two points of view: the development of ideas and skills, with a view to obtaining an entrepreneurial culture; the training for entrepreneurship. At levels of secondary education and vocational training, students would develop personal qualities and learn through practical training, and through high level training, students learn to write a business plan (Hernández, R. et al. 2010).

Vesper et al., (1999), also states that entrepreneurship can be culturally acquired and subsequently influenced by education and training. Díaz et al., (2010) through a study carried out on 380 Spanish experts, reveals that education is not a variable relevant to entrepreneurship is rather a facilitator face to cultural and social norms.

This is an old concern in the European Community has been proposed in 1986 a set of practical guidelines for promoting the "Entrepreneurial Spirit", related to the transition of young people for working life, emphasizing the fact that these guidelines be cut across all disciplines and areas, highlighting the importance of carrying out projects, work experience, visits to companies, in collaboration with entities outside the school, creating products and their marketing, business simulation, etc..

At the level of implementation of projects is emphasized and promoted the initiative and creativity. The European Community provided (2006) a set of suggestions to promote entrepreneurship in higher education, including: the integration of this theme across different subjects and courses, the support of public authorities and politicians, ensuring adequate training of teachers and networking, and encouraging mobility of teachers between universities and the business world.

The Portuguese Case

The importance of investing in higher education preparing young people for professional performance appropriate to the current circumstances of the country is referred to by Tavares (2003). The same author also states that (...) the initial training should obey another curriculum design and unfold within another dynamic teaching and learning and to be continued in a consistent training throughout the life of the update own knowledge and retraining may happen several times during the lifetime of active life (Tavares, 2003, p.78).

In 2004, during the implementation of the Bologna Process in Portugal, the working group recognized that the teaching methods did not meet the needs of entrepreneurship education, with teaching being very masterful, recommending a new organization through active methodologies more participatory and cooperatives (Simon et al., 2004).
The Catholic University was the first higher education institution to include in its training offer the Entrepreneurship in 1992 (Redford, 2006).

In Portuguese schools is increasing the implementation of entrepreneurship projects, existing even a project organized by the Directorate General for Innovation and Curriculum Development which aims to contribute to a continuous development of key skills among students (self / risk taking, initiative, endurance, planning / organization, creativity / innovation and communication) and appropriation of entrepreneurship at schools and educational communities (Ferreira et al., 2007).

Redford (2007) refers to teaching growing disciplines of entrepreneurship and that there are different trends within the theme not only in different educational institutions but also in entrepreneurship centers. The majority of teachers surveyed in the study of Redford said that their university had intention of creating a center of entrepreneurship.

Also states that in the academic year 2005/2006 the number of subjects of entrepreneurship increased to 26 in 21 institutions, compared to academic year 2004/2005 where there were 22 subjects in 17 institutions, which is a relatively recent phenomenon in our country, with the majority of subjects (63.3%) taught initiated in 2002 or later. This development comes as a response to the current needs of the market and the interest of teachers in addressing this issue (Redford, 2007).

Also according to this author, the program contents of the courses on entrepreneurship are diverse, ranging from the theme of "Identification of Opportunities" and "The control and prevention of bankruptcy." He also highlighted the importance of entrepreneurship education should be promoted since the early years, by primary and secondary schools, to universities, instilling in children early entrepreneurial skills. A study conducted in 2009, comparing students of Extremadura (Spain) and students of Beira Interior (Portugal), first find it easier and feasible at present, create a business than a few years ago, instead of the seconds that turn out to be harder now (Diaz et al., 2009). According to the author entrepreneurial intention, in Extremadura is higher than in Beira Interior.

Conclusions

After analyzing the different points, it is worth noting that the approach to entrepreneurship is not yet transversal to the different courses, lies more in the areas of Management and Economics, because these teaching variants more easily internalize the idea of creating / innovate in a project or a business. We must overcome the habits installed and begin teaching in terms of cross-fostering a culture of responsibility and requirement. It should be used an approach across all courses creating work teams from the various courses as well as stretch the concept of entrepreneurship to various courses as a way to internalize this dynamic behaviour and not just as a unit embedded in a single formation. In fact, most effective type of bet teaching and learning in the theory of masterful various doctrines, avoiding creativity and approach of the individual student. Moreover, the traditional paradigm methodology leads to behaviour too standardized by the teacher who does not enhances the learning to be. It is essential to the establishment of networks between universities and businesses, or other organizations that we can learn by doing, as a way to stimulate knowledge in situations that will force individuals taking positions leading to learning being. Teachers should have a greater flexibility f work programs as a way to enable them to be more innovative in the context of the classroom. We can not separate what is learned from how it is learned, allowing the existence of a proactive teaching, fostering behaviours consistent with a permanently evolving society in which we live.
Bibliography


7. LEARNING ENTREPRENEURIAL COMPETENCES: PARADOXES IN THE LEARNING PROCESS

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This full paper is publish in a special edition of Egitania Scientia Journal-ENTENP 2013 with ISSN 1646-8848, September 2013, selected by the entrepreneurship editors of the journal.

Abstract: The purpose of the longitudinal study was to ascertain to what extent students’ entrepreneurial competences developed on the degree programme. The study examined the perceptions of the students by mixing different research methods. Six subsidiary-studies were conducted in total. In this paper, only the results of three subsidiary-studies are discussed and the results are discussed from the viewpoint of the paradoxes in the learning process.

The findings indicated that competence profiles and entrepreneurial intention are interrelated already in the beginning of the studies. Further, the learning objectives of the degree programme are realistic for the first-year students to be achieved. There lies the first paradox: self-regulation in learning is expected, yet the students may lack the abilities for self-directed learning and meta-cognitive learning strategies. Secondly, use of creativity is expected to some extent, yet the students are not sufficiently encouraged and supported by teachers. Thirdly, the entrepreneurial attitudes of the students were quite positive, yet the attitudes remained stable or declined during studies. Forthly, the degree programme had a positive influence on the development of business competences, but not on entrepreneurial intention. It can be concluded that there is a need for changes in pedagogy and learning environment, if the aim is to promote the entrepreneurial competences of students more and increase their new business creation.

Keywords: students, competences, entrepreneurship, intention, learning, perceptions
8. EDUCATING FOR ENTREPRENEURSHIP: A NEW CHALLENGE FOR TEACHER TRAINING INSTITUTIONS

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This full paper is published in a special edition of Egitania Scientia Journal-ENTENP 2013 with ISSN 1646-8848, September 2013, selected by the entrepreneurship editors of the journal.

Abstract: On the first part of the article we defend the idea that we are nowadays living a new economic and social paradigm which poses new challenges to local communities and citizens. Societies have globalized themselves and opened up to the world. The economy is increasingly based on knowledge, and competitiveness is becoming even more fierce and dependent of innovation and differentiation factors. This set of constraints demands from local communities a strategic repositioning. This being the case, it is crucial that the different local players are equipped with enhanced skills in the area of entrepreneurship, a sine qua non condition for guaranteed success in this new socioeconomic scenario.

We then argue that raising awareness to this area is essential to preparing our young people for the challenges that they will have to face throughout their life, in order to stimulate their creativity and capacity for initiative and innovation. Therefore, the promotion of the spirit of entrepreneurship in schools is a critical step towards this aim. So, entrepreneurship education should clearly constitute a strategic instrument of the contemporary education policy.

Subsequently, we assume that there is a set of arguments coming from different disciplinary backgrounds, namely from the psychology, the pedagogy, as well as from the economy and management, that give support to this bet and justify the need for teacher training institutions to intervene in this new area. We will deepen this problematic as a means to back the urgent need for higher education players to answer positively to this new challenging problem. We, then, will concentrate on the efforts that are being done by the Castelo Branco Polytechnic, School of Education, in Portugal, an institution with a long tradition in the area of teacher training, pointing out the main features, initiatives and projects that characterize its strategy on this new training field.

Keywords: Entrepreneurship; entrepreneurship education; teacher training; professional skills.

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9. INFOGRAPHICS IN THE EDUCATION CONTEXT

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Introduction

A changing world requires, necessarily, a new approach to education in which the society of information and communication has been assist major technological and scientific advances. In this context, be lawful reflected on the importance of training for teachers and if it is adjusted or not, to opportunities and challenges of the information society provides, and how far teachers can be sensitized to the imperative of using new teaching resources in the classroom, selecting, whenever necessary resources - internet, electronic networks, educational software - more harmonized in pursuit of certain goals.

The teacher is increasingly motivated in its mission to develop skills, forming constructive and active citizens. And actually, in parallel with the information society, there is, gradually, a colossal interconnection. As refer Bairrão & Gouveia (2007: p.17) "Teaching and learning can be seen today, as two sides of the same coin. The act of teaching should be viewed as an art, a permanent state of mind that makes the true teacher who is concerned mainly with innovation in the field of learning towards building provide the conditions for the "know-how" and promote knowledge to acquire by their students".

The XXI century school can’t remain indifferent to the world around it, should ensure a relevant and quality education for all students. It is then the task of teachers to keep up revised with that these new resources/materials provide in terms of education, specifically educational infographics, framed in an environment of teaching and learning.

In fact, learning is changing. For this, we need a new attitude to research information used dynamically. This will require the use of different digital media and stimulants: "teachers work in a changing world" (Hargreaves, 2001: p.43) and the change concerns us all.

Infographics in an educational context

Nowadays, society is each more dependent on the images due to lack of time to read and analyse information. Infographics emerges as a resource that is characterized by the presence of dissociated images and text within a narrative construction (Cajigas, 1995).
Sancho (2001: p.15) mentions "modern man understands better what you see that counts and makes him easily a new way of conceiving ideas through infographics".

However, it is not easy to establish a sense of infographics, because, as mentioned Braga (2009) this concept is still under investigation, however it is possible to note that "Infographics is a communication resource that uses visual elements combined with verbal texts, and reduced aims to give information" (Braga, 2009: p.4).

In this context, paraphrase Schmitt (2006) infographics exposes a potential that contribute to the democratization of scientific knowledge, became an important resource in science and technology because, "infographics enables an attractive presentation of information considered difficult to understand using information and smoothly image combination" (Schmitt, 2006: p.15).

Today, young people is no longer conceive the world without technology. This rapid explosion of new technologies, especially information that "(...) almost zigzags - or emerges as decisive, or sometimes loses importance and value - but do not stop growing, available and accessible in almost industrial quantities" (Minguens, 2004: p.9), creating a new interactive society, more informed, more globalized.

As refer Lamb (2005) the role of the teacher, in a information society is a simple advisor, diffuser and facilitator of access to information, building new pathways to enable students to acquire a set of skills.

Lamb (2005) also mentions that students of the current digital society era, also called the "Net Generation, N-Geners, e-generation, generation Z, Zap generation, Homo Zapiens or Generation Zap" (p.17) program and concretize activities simultaneously, is accustomed to the "action". These students have a very different way of thinking of the students for a decade ago, because the media, as television and computers, transmits the information to them quickly.

The school has a role in the construction of knowledge, cognitive skills that allow students to build their knowledge not only in terms of ownership, such as analysis and critical issues (Figueiredo, 2007).

The visual presentation of teaching materials should be used in schools since the early years, therefore, simplifies the understanding and expression of ideas of different themes (Peçaibes & Medeiros, 2010). The use of infographics materials teaching should be seen as "complementary resource accompanied by other educational records to be complementarity in diversity and multiculturalism own social reality of the current school" (Reinhardt, 2007: p.132).

The infographics have, thus, the mission to transmit text, news, events or data in summary form and visual, facilitating the understanding of information, sometimes dry and complex and stimulated thus the interest of the reader, so that can select only what interests him.

Using infographics as a teaching resource, students gain access to a wide range of content that can be analysed in various formats, since both can be a complementary source of information, as a form of research as a basis for discussion, learning and teaching strategy as a resource for distance education using websites, using of free resources that can be used by teachers in the context of the classroom (Junior, Lisbon, & Coutinho, 2011).

However, the infographic is not intended to take the place of papers, such as academic articles. Before, it complete knowledge and provides means for the learner to deepen the content presented by infographics (Person & Maia, 2012).

**Carolina Beatriz Ângelo: a short live but very intense - a pioneer on several fronts**

Education should not be left out of this new context. As we live today under the age of information, the use of infographics in the field of didactic education
helps transform/improve their methods, allowing students to develop their knowledge and learning (Palmeira, Tenorio, & Lopes, 2010).

In this sense, the infographics combining words, images and graphic design. To organize and prepare an infographics, it requires a motivation and skills to write accessible and clear texts, in terms of illustration, emphasize in translucent and organized way, the layout of infographics, to capture the attention, understanding and the audience interpretation. Sometimes this work is performed by a group of people, "with specific skills and experience in each of these areas" (Marques, 2008: p.31).

Infographics to "tell a story" renews the information that may have some complexity into something more understandable and interesting, because the images more easily capture the reader’s attention (Sousa, 2012).

In this sense, the infographic must be perceptible, easily readable and more importantly, capture the attention of the target audience, so it is essential to understand if it is or not a useful infographics for the audience, since it is this audience that restricts the final message (Marques, 2008; Minervini, 2005).

In this context, the infographics presented in this project has the mission to transmit texts, events or data in a concise and visual way, facilitating the understanding of information, sometimes dry and complex and thus stimulate the reader’s interest that this so you can select only what interests him.

For some authors (Peltzer, 1991; Sancho, 2001; Cairo, 2008) the image represents an increasingly prominent place in communication, nowadays students learn more easily what they see through the image, than tell.

In this sense, elaborate educational infographics intends to implement an educational context, following the line of thought of Peçaibes & Medeiros “the visual presentation should be effectively incorporated into the school curriculum from the early grades, as would facilitate the understanding and expression of ideas several themes ”(2010: p.1).

Several authors (Schmitt, 2006; Braga, 2009; Bulawski, 2009) alert for the fact that infographics is a valuable resource that describe, shows and explains quickly and attractively information, that if was explained only by text, the understanding would be more difficult.

Concerning to the materialization of infographics we’ve relied on Colle (2004) which divides infographics into categories according to their goals, applying, in this sense, the category of infographics news or journalism, which apply in the newspaper or online articles, which in this case, that pretend to apply on the website of the Basic School Carolina Beatriz Ângelo of Guarda.

On the other hand, the infographics are of several types (Ramírez, 2012: p.2) taking into account it interactive level:

- Infographics static: the images and the texts are statics;
- Animated infographics: the images and the text have movement;
- Infographics interactive: the information and the user are dependents to achieve this functioning.

The infographics presented in this project frame to the level of interactive infographics, and combining information displayed sequentially, requiring user intervention for it materialization.

As refer Ribas (2004: p.4) infographics function is to "facilitate communication, increase the potential of understanding by readers, allowing an overview of events and detail information less familiar to the public”. This same goal can be achieved with the application of infographics presented.

Concerning to the application fields of infographics, following the line of thought of Colle (2004) the infographics presented frame inside the range of pedagogical and scientific infographics, in which the transmission of technical and scientific knowledge, by using infographics is achieved, more easily, the understanding of knowledge that are intended to disseminate.
Through analyse the infographics we can get a global perception of the principles enumerated by Cairo (2008) in the development of digital interactive infographics: visibility, feedback, affordances, constraints and consistency.

In the foreground infographics interactive digital set a timeline, which identifies the chaining temporal life journey of the most remarkable events of Carolina Beatriz Ângelo.

In the background of infographics, it is practicable to observe a set of images and data that correspond to a selection of events defined by a set of factors defined, based on a development or sequence of historical facts, geographical, political, economic and social. In this sense, when the students selects a date of the timeline there is a change events. So, this confirms that in the year of 1878 corresponds to the year of birth of Carolina Beatriz Ângelo. Effectively is presented more information for each of the dates, when students select a specific date, and they can return to the home menu wherever they want.

Taking in account the target intended, specifically students, who prefer visual to textual content, the visual correspondence with infographics didactic acquires an enhancement position, attracting the attention of readers.

The infographic didactic covers educational content in the discipline of History and Geography of Portugal (5th and 6th years). Infographics shows a sequence of events which, if you want to, become more appealing and interesting to research and the know level. On the other hand, it has the advantage that they can be placed on the platform/school website enabling students to access and interact, at any moment, not being confined to only moments class.

Conclusion

There are several authors who consubstantiate the importance of the use of infographics in the school context. Braga (2009) noted that the infographics is a didactic educational material, attractive and easier to understand, that will turn complex concepts in visual form enabling it to become more practical and real to the student. On the other hand, and in the opinion of Peçaibes & Medeiros (2010) the visual presentation of teaching materials should be used in schools since the early years, therefore, simplify the understanding and expression of ideas of different themes.

To confirm this statement Cairo (2006: p.15) refers that "infographics are fundamental tools in education, and even more in the actuality, now that we can take them and use them in digital resources that multimedia offers them".

Person (2012) goes further by affirming that through infographics can be produced more interesting contents, which enable a higher utilization at the expense of learning contents shown using only the verbal text.

However, Brigas (2012: p.158) alerts for the fact of "the clarity allowed by the use of infographics, as well as rapid comprehension of the message, constitute advantages to be used with prudence and always accompanied by scientific criticism to the way how the data collection process and the data effectively measured ".

References


10. SIGNIFICANCE OF PEDAGOGY KNOWLEDGE IN ENTREPRENEURSHIP PROFESSIONALS’ TRAINING

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1. Introduction

Internationalization the economy and trade, global context of technologies and mainly origination of the Information Society have increased people’s ability to access information and acquire knowledge, and at the same time has changed the organization of work and acquired skills. These are the factors that have transformed the economic context and the way in which our society operates in a radical and a stable, long-term way. Our epoch and social existence requires exquisite products, services and ideas. In parallel with this trend, the rapid growth of the world market increases the demand for talented people. Formation of the Information Society, the impact of the scientific and technological world and internationalization in the context of sustainable development exactly has raised the need for a learning society, for the activities of individual self and targeted professional training and self-development, the demand for high-end professionals.

Nowadays, professionalism of any employer is no longer possible without analytical thinking skills in issues of social and human sciences, as well as in philosophical and ethical issues. Activity in situations that threaten mankind with overload, irregularity, chaos, an abundance of information, more than ever requires analytical thinking abilities to be able to find alternative ways of analysis and new business opportunities. Situational and analytical thinking of young professionals is to try to realize these huge correlations. Only a business professional who has developed professional identity consistent with the requirements of the epoch can successfully address the global challenges of the society. It is possible to increase each individual’s quality of life by balancing the acquired academic knowledge in the study process and practical competence, understanding and harmonizing their individual personality requirements and the possibilities of self-implementation in the professional field of activity. Continuous self-reflection of personal activity is an important element in the context of professional development.

Vastness of knowledge enables people to find their place in the Information Society, that is, gives them the ability to critically interpret the images and the
information they receive from various sources. Observation skills, common sense, curiosity, interest in the physical and social world around us and the desire to experiment are the qualities that are often left unnoticed. However, these are the qualities that enable us to educate inventors rather than simple technology leaders, managers - as highlighted in the White Paper insights (The White Paper, 1995).

Psychologist D. Goleman (Goleman 1995) points out that capacity-building, which he called the emotional intelligence, can help the society get out of the common emotional impasse. That means self-control, diligence, persistence as well as the ability to motivate own action. Discussion on the importance of emotional intelligence emphasises interdependence of emotion, character qualities and moral propensities. A strong character is based on the will power and the ability to control impulsivity. Similarly, the beginning of altruism is found in empathy - compassion or ability to empathize strange emotions. Modern person’s most needed moral qualities are countenance and compassion.

The future vision of education includes such necessary features for every individual in instilling the confidence as self-control and compassion, the ability to listen to other people, resolve conflicts, and work in a team. In his Nicomachean Ethics, a philosophical study of human nature, virtue and successful life, Aristotle set himself the objective to teach us the ability to rule over our emotions with the help of intelligence. Outbursts of feelings if they are directed to the right track are not unreasonable: they determine our thinking, our system of values, and our entire existence.

Purpose of this article is to characterize the potential of pedagogical expertise in the professional identity development process of business specialists by updating individual and social interaction opportunities of personal growth.

2. Disposition of Theoretical Cognitions

2.1. Pedagogical Innovation in Higher Education

Organization of the higher education process must respect the cognition that natural changes in the logical thinking are typical for young people. These changes were found in the classic four-year research of students’ thinking process involving 140 students from universities in the United States (Perry, 1970). The mentioned research confirms that at the beginning of their studies students interpret the world and their educational experience in the authoritarian, dual way. They are looking for truth and strive for cognition. According to them, the world can only be good or evil, right or wrong; the role of teachers is to teach them, but their personal role – to dutifully learn. Soon students, in their quest for cognition, face uncertainty, disagreement of opinion, deceptions and variations. Often the subjects are set out in a way to encourage students to seek answers to questions. Dealing with different opinions, the students gradually begin to recognize and accept the diversity of views and opinions. This period is long, because it is very difficult to disregard the logic of one right answer which has been acquired during the secondary school, often impossible to guess what right answers are expected. In the study process students gradually get used to the realization that people are entitled to the diversity of opinion, and each person is entitled to view the same phenomenon from two sides depending on the context, and maybe even in several aspects. Thus, students’ thinking influenced by the study process evolves from the original dualism to conceptual relativism, and then to their own chosen position and responsibilities. This is a typical example of the intellectual development of early youth (Perry, 1970). This stage of intellectual development is important in creation of the personal opinion, values, and ideals of the emerging professional.

In the analysis of typical examples of thinking in early youth K.Riegel (Riegel, 1975) considers awareness of contradictions as an important feature of
cognitive development. A very important aspect of dialectical thinking is integration of the ideal and the real. Practical, everyday world (reality) becomes a dialectical correction of the artificial, abstract, formally - operational thinking (ideally). It is the strength of an adult thinking.

“Obligatory and responsibility” are offered as criteria of cognitive maturity (Labovivie - Vief, 1984). Cognitive development of adults envisages both - development of logical thinking as well as skills of self-regulation development and independent decision-making. At an early age, people use their intellectual skills to build a career and the choice of life style. This is a difficult and complicated development cycle of an individual’s life which is called the period of performance (Schaie, 1986). Achievement period is an important stage of cognitive development, a time in which young people take the ability to think, solve problems and make decisions.

The most important personal decisions for young people are not taken on the academic sphere of development, but on development of their life plan and professional identity revelation. Young people, who are capable of performing the tasks of the achievement period, obtain a certain degree of personal independence and easily switch to the use phase of cognitive skills - social obligation period. Human intelligence is being used in a flexible manner at all periods of life. It is the basis for both the professional as well as personal success and benefits.

The most significant basic task of the achievement period is creation of the professional identity of young people. Identity - full oneness of features, quality, character, etc. within a certain group, behavioural and / or personal characteristics by which an individual is recognized as a representative of a group (Csikszentmihalyi, 1990).

Higher education in the world is in a changing situation trying to find optimal ways of strategy and innovation to ensure sustainable society. Research and development (R & D) is a creative work that is carried out systematically in order to increase the amount of knowledge, including knowledge of a person, culture and society, and to use this knowledge in new developments (Frascati Manual 2002).

Family and every candidate for an internationally recognized higher education diploma is becoming more demanding to higher education institutions and their provided study programmes. Basically this fact is very positive because it ensures continued quality self-evaluation of study programmes, peer evaluation and improvement. Conversely, program evaluation and innovation, acceptance and implementation of future professional studies can only be done by integrating internal and external factors. In particular, the public demand results in increased international co-operation and real possibilities of co-existence in quality assurance of higher education institutions in Latvian and other European countries. Continuous fluctuation respecting changes in higher education internationally today is also the reality of other European countries.

European countries, where education change processes have already overcome not only the recovery period after the Second World War, but also the stages of expansion and reform and which are ready for a common European Educational Area have defined specific perspectives for higher education. Although the successfully implemented programmes have been accredited, today's study process cannot be considered to be a model of excellence. This cognition comes from the simple fact that it can be seen how dynamically the society changes and how complex the search is for an ideal in schools. Looking back and analyzing how much has been done, it is clear that tomorrow will not be more uneventful. Variation rooted in the traditions and achievements characterizes each education institution's growth and development, significantly impacts professional identity and the context of the values of everyone involved in the education process. Innovations are the developing factor in education programmes for the emerging business professionals.
What pedagogical innovation in higher education can, focusing on correlations of young people’s personal development phase, eliminate confusion, uncertainty and nihilism? How to build a secure foundation of professional identity which is based on human dignity, efficiency of social interaction and effectiveness of positive achievements? How to develop a professional identity providing development dynamics, quality and continuity of higher professional and academic education relevant to the European and international dimension? Revelation of the professional identity in the study process can purposefully impact young person’s values of life and the appropriate choice of profession and fulfilment. Only the people who learn to control their inner experience will be able to determine the quality of their lives (Csikszentmihalyi 1990).

Assessing the formation process of students’ professional identity, current stage of professional development of the personality must be taken into account because generally individual’s professional development is practically taking place throughout that individual’s working life. Analysis of periodization of professional skills indicates that there are several stages in theory leading to the summary and setting the framework for differentiation.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Psychological expression of professionalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Amorphous option (0–12)</td>
<td>Professionally oriented interests</td>
</tr>
<tr>
<td>2. Option (12 – 16)</td>
<td>Professional intents, choice of professional education options, educational – professional self-determination</td>
</tr>
<tr>
<td>4. Professional adaptation (18 – 25)</td>
<td>New social roles, obtaining experience of independent professional activity, awareness of professionally significant qualities</td>
</tr>
<tr>
<td>5. Initial professionalization</td>
<td>Professional position, individual working style, qualified work</td>
</tr>
<tr>
<td>6. Second professionalization</td>
<td>Professional mentality, identification with professional organisations, professional mobility, flexible working style, highly qualified work</td>
</tr>
</tbody>
</table>

Table 1- Stages of Individual’s Professional Development (Zeep, 2006)

To be able to purposefully influence the identity formation of young professionals during the period of obtaining higher education, it is necessary to systematize and update the pedagogical potential for ensuring quality of the study process.

2.2. Values’ Actualization in the Higher Education

Things, facts, phenomena, which a person experiences as essential and which foster and promote the development of his or her personality, are the values of his or her life. It is important to help people discover their essence, to direct the content of all their life efforts and desires in line with their values. In addition to this task important principles in acquiring values can be brought forward:

- Development of individually valuable properties, emphasizing to the person not only who he or she is, but also what he or she should be;
- Evaluation of personal ideals and linking them to specific content and creative imagination;
- Dependence of education achievements from psychological, didactic, methodological aspects.

The value attainment process is an attempt to teach about values, clarify and interiorize them, develop evaluation skills. Many see the values as socially and culturally accepted standards or rules of behaviour. Evaluation in this case is viewed as the process in which identification of the person and acceptance of prevailing standards and norms in the society take place.

World studies activate different approaches to the process of updating values. One of the most popular is the "suggestion", "implantation", which aims to embody pupils with the known, absolute values, to change pupils’ attitudes.
towards them. Modelling, positive and negative reinforcement of the values, manipulation, games and simulation can be noted as most used methods in this approach. Developments in society have highlighted the need to focus on the moral development of the future personality. Objective of the pedagogical activity is to help the young generation to develop more sophisticated forms of moral reasoning based on higher values, to encourage engaging in discussions about their value preferences and opinions, not just to share with others, but to contribute to changing values.

Discussion of episodes of moral dilemmas in small groups is important, as well as the relatively structured argumentation without necessarily “right” answers. Therefore, it is essential to focus on building skills of analysis, thus helping students develop logical thinking and scientific research in order to assess the values, as well as rationally and analytically weigh and conceptualize their own values. Structured discussion, testing, analogous case studies, research tasks and debates can provide good assistance.

Clarification of values promotes the diversity of values, understanding their nature, creates opportunities for students to become knowledgeable and to identify their own and other values, helps to be open and respectful in negotiations about their values based on rational and emotional thinking, to identify their personal feelings, values, and the model of behaviour. It is facilitated by role-play, portrayals, fictional or real situations full of values, comprehensive tasks of self-analysis, a variety of activities, small group discussion.

Learning in action, which aims to create situations for the assessment of values and to provide opportunities to discover own values in personal and social action, may be helpful in participation in public projects, as well as in the formation of interpersonal skills in a group. Therefore it is essential to:

- Encourage everyone to think about the different values and find their practical application in relation to themselves, others, society and the world in general;
- Promote a deeper understanding of values, motivation and accountability through positive personal and social choices;
- Inspire everyone to choose their own personal, social, moral and spiritual values and to discover practical methods for developing and deepening them;
- Encourage to look at education as the provider of younger generation with the philosophy of living, thus contributing to their comprehensive development and choices to enable them to integrate into society, based on respect, trust and will.

Intelligence is the ability to accumulate knowledge, thereby creating a social experience, and the ability to apply this experience to new situations. Person’s spiritual growth and relationship aspect is particularly important in the teaching/educational work. Responsiveness, development of feelings, mutual respect and building relationships should be topical as pedagogical values in the educational process.

The modern paradigm of education is based on the knowledge of humanitarian paradigm, which nature determines development of a person’s a priori given spirituality (humanity) in the process of his or her upbringing. Humanity is characterized by the following basic components: self-esteem, self-confidence and self-reflection (Belickis, 2000). Objective of the democratic society is to recognize a person as the highest value and ensure that everyone can fulfill their humane potential. Harmonious development of the individual means balance of intellectual, emotional and purpose development. It is therefore important to promote from a young age formation of self-regulation skills, based on the reflection, systematic analysis of own actions and evaluation of results (Spona, 2001)
2.3. Cooperation in the Educational Process

Relations systems’ "subject - subject" acceptance and implementation in the business environment promotes purposeful cooperation with the client and ensures the realization of the objectives of social interaction. During the process of social interaction needs of individuals are enriched and ensured more successfully, evolves self-esteem of subjects of both involved parties. One of the most important tasks of professional education is to help future professionals be aware of their social impact force, develop tools that facilitate communication and collaboration, as well as the ability to constructively manage conflicts and solve problems. Therefore elements of emotional intelligence that form the business culture are purposefully emphasized during the process of cooperation.

Cooperation - a joint, mutually coordinated action, if necessary, by supporting each other. A common objective and tasks are for the cooperation partners. It is the provision of development and improvement of the education process. Teamwork is one of the key elements of cooperation. It is therefore vital that teamwork is used during the study process. Team - a group of people organised for working together, for a shared task and take responsibility for it. Everyone in a team can take on a task that most suits his or her abilities and competence. This group has similar understanding of the nature of the work to be done, common objectives, developed workflow, and collaboration during work. Acquisition of cooperation skills facilitates a guarantee of quality and professionalism in business education. Cooperation is based on the relationship between the parties involved in the process, it aims to stimulate students’ competencies that are and will be needed for the future work.

The aspect of cognitive awareness mutually correlates during attaining of the study the process which includes synthesis of abstract and actively reflexive dimension with the practical aspects of the role including elements of activities, objective, context, and time based on the discovery and creative learning. Integration of study knowledge takes place forming a strong bond with other study subjects, creating an interdisciplinary study process. The program of the study process systematically includes a transition from one level of knowledge to the next, matching a systematic development of study skills and continuous strengthening of knowledge in practical exercises and independent practice. In the study process, students are offered, as the option for purposeful studies, to base studies on a divergent learning style, which develops the ability of creative skills, considering the possibility of the alternatives and reflectance. Of course, parallel to attaining of the programme a convergent style is involved, dominated by goal-setting and problem definition based on practical application of one correct answer without alternatives.

In implementation of the educational process problem-based learning plays an important role that can be defined as a learning approach that begins with bringing forward real-life problems to be solved during the training, after the identification of the knowledge and skills necessary to acquire in order to resolve the problem. Different sciences integrate within one problematic situation thus providing implementation of an interdisciplinary approach. Problem-based learning provides a strong link between the theory and practice. Basing studies on the problem-based learning attitudes among students and teachers change.

A teacher is:

- A mentor and supporter helping students grasp new perspectives;
- Discusses with the student as a potential colleague, looking at the alternative ways of addressing the situation;
- Helps the student find focus if action is not well targeted;
- Emphasizes the importance of balancing activities in a relationship nurse - patient or physician assistant - patient and the team as a whole in general.
Creative activities of teachers are important in the study process using a variety of shapes and forms. In the context of the topic we can talk about the importance of the teacher’s creativity potential associated with the broadening of competences in pedagogy and the professional field selecting effective, original activity strategy in specific cases, as well as developing a personal, humane system of values, which in turn can contribute to development of students’ competences and creativity. Encouraging students to logical conclusions and action contribute to creativity, which is associated with increased motivation to develop their individuality, desire to succeed, and positive growth of self-esteem.

2.4. Pedagogical Potential for Increasing Business Capacity. Research Aspects from the practice

In order to find out opinion about the needs of pedagogical knowledge of business professionals in the business context a survey was carried out involving respondents of both sexes with different seniority and higher education in business.

![Figure 1 - Needs of pedagogical knowledge of business professionals](image)

Respondents indicated that it was not enough with the psychological knowledge that allowed understanding psychological processes happening in an individual, but it was important to know and be able to apply different pedagogical knowledge-based approaches to the process of activating the positive, or in contrast to be able to minimize their negative impact.

In today’s economic conditions Latvia as well as many other countries is in crisis causing both financial as well as psychological problems - stress, which adversely affects a person’s mental and physical health. Rapidly changing situation in the country has led to insecurity and uncertainty about the future, as well as opportunities for professional work, which further increases the stress. To be able to generate income in proportion to the rising level of inflation, in recent years most of the Latvian population, due to the country’s economic situation, are forced to work under increased stress and even at two or more jobs, thereby exposing themselves to the risk of burnout, because as soon as the stress is getting out of control, it will inevitably cause burnout. In order to cope with increasing levels of stress, people use a variety of stress management strategies in order to reduce the tension, leading to even more often suffering from burnout syndrome.

Manifestations of stress at work are varied and comprehensive. Dunham (Dunham, 1998) emphasizes the effects such as frustration, anxiety, fatigue and burnout, a simultaneous perception of different types of communication. L. Tatarnikova considers the responsibility, time and individuality to be the main risk factors at work (Татарникова, 2006). O. Lopez, S. Marino and K. Bolano study of key personal, psychosocial and vocational aspects of life factors affecting the business environment and beyond, as well as their correlation with the different dimensions of burnout reveals that these areas of life are associated with a variety of burnout syndrome expressions. Social support and optimism are selected as mitigating factors, but factors such as the duration of the working
week, work experience, work load, behaviour, and events of life, and daily routine increases the differential development of burnout profile (Otero – Lopez, Santiago Marino, Castro Bolano, 2008).

Professional burnout intensity depends on the individual stress management strategies. High burn-out rate is for those who use passive tactics to fight stress, but for individuals whose position in life in relation to stress factors is active, the burnout rate is low. In a study of burnout level relation in business professionals to stress management strategies, it was found out what the burnout rate of entrepreneurs is and what stress management strategies were used, and whether there was a link between the level of burnout and stress management strategies. Analysing stress symptoms specific to tension, it was evident that predominant symptoms of respondents with high levels of stress at this stage are the experience of psycho-traumatic conditions, anxiety and depression (see Table 2).

<table>
<thead>
<tr>
<th>Tension</th>
<th>low (n=71)</th>
<th>medium (n=25)</th>
<th>high (n=4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Experience of psycho-traumatic conditions</td>
<td>5,66</td>
<td>4,92</td>
<td>12,20</td>
</tr>
<tr>
<td>Dissatisfaction with themselves</td>
<td>4,17</td>
<td>3,22</td>
<td>9,24</td>
</tr>
<tr>
<td>„Driving into a corner“</td>
<td>2,17</td>
<td>3,59</td>
<td>7,64</td>
</tr>
<tr>
<td>Anxiety and depression</td>
<td>5,44</td>
<td>4,95</td>
<td>14,16</td>
</tr>
</tbody>
</table>

Table 2 - Averages of Stress Symptoms in Business Professionals with Low, Medium and High Stress Levels

Assessing characteristic expressions of symptoms specific to the phase of resistance, it is evident that dominant symptoms of respondents with high level of resistance are inappropriate emotional response, reduction of professional duties and emotionally moral disorientation (see Table 3).

<table>
<thead>
<tr>
<th>Resistance</th>
<th>low (n=23)</th>
<th>medium (n=58)</th>
<th>high (n=19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Inappropriate emotional response</td>
<td>5,65</td>
<td>3,63</td>
<td>14,95</td>
</tr>
<tr>
<td>Emotional moral disorientation</td>
<td>7,22</td>
<td>3,96</td>
<td>10,91</td>
</tr>
<tr>
<td>Broadening the field of emotion economy</td>
<td>1,13</td>
<td>0,45</td>
<td>1,28</td>
</tr>
<tr>
<td>Reduction of professional duties</td>
<td>8,26</td>
<td>3,62</td>
<td>13,48</td>
</tr>
</tbody>
</table>

Table 3 - Averages of Resistance Symptoms in Business Professionals with Low, Medium and High Level of Resistance

Conversely, analysis of characteristic symptoms of the exhaustion phase shows that the dominant symptoms of respondents with high level of exhaustion phase are emotional deficit and depersonalization (see Table 4).

<table>
<thead>
<tr>
<th>Exhaustion</th>
<th>low (n=60)</th>
<th>medium (n=23)</th>
<th>high (n=9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Emotional deficit</td>
<td>7,37</td>
<td>5,29</td>
<td>13,58</td>
</tr>
<tr>
<td>Emotional estrangement</td>
<td>7,00</td>
<td>4,04</td>
<td>11,45</td>
</tr>
<tr>
<td>Personal estrangement (depersonalisation)</td>
<td>4,00</td>
<td>3,71</td>
<td>8,45</td>
</tr>
<tr>
<td>Psycho-somatic and psycho-vegetative disorders</td>
<td>5,20</td>
<td>3,66</td>
<td>11,29</td>
</tr>
</tbody>
</table>

Table 4 - Averages of Exhaustion Symptoms in Business Professionals with Low, Medium and High Level of Resistance

Analyzing overall level of burnout in business professionals, three groups were formed. Out of 100 respondents only in 17 no burnout phases have yet
reached a certain stage of development (i.e. the number of points in any of the phases did not exceed 36 points). In turn, significantly high number of respondents who had at least one burnout phase under development - 62 respondents, most of whom not only had one, but two or three phases in the stage of development. 21 respondents had already fully developed at least one of the phases of burnout. There were three respondents in the third group who had three fully developed burnout phases.

In general, out of the selection of business professionals, 83% has either already developed some or even all burnout phases, or they are in the formation process, and only in 17% of business professionals signs of burnout development have not reached a dangerous level.

Evaluating business professionals’ choices of stress management strategies, we can see that those with high level of tension have high indicators of social support search, avoidance and impulsive activity (see Table 5).

<table>
<thead>
<tr>
<th>Level of tension</th>
<th>low (n=71)</th>
<th>medium (n=25)</th>
<th>high (n=4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Assertive activity</td>
<td>22,20</td>
<td>2,24</td>
<td>22,16</td>
</tr>
<tr>
<td>Initiating social contact</td>
<td>23,39</td>
<td>3,32</td>
<td>23,32</td>
</tr>
<tr>
<td>Social support search</td>
<td>23,03</td>
<td>3,59</td>
<td>21,08</td>
</tr>
<tr>
<td>Careful activity</td>
<td>20,59</td>
<td>3,69</td>
<td>21,48</td>
</tr>
<tr>
<td>Impulsive activity</td>
<td>18,13</td>
<td>2,99</td>
<td>19,28</td>
</tr>
<tr>
<td>Avoidance</td>
<td>17,61</td>
<td>3,81</td>
<td>18,16</td>
</tr>
<tr>
<td>Manipulative activity</td>
<td>16,83</td>
<td>3,51</td>
<td>18,04</td>
</tr>
<tr>
<td>Antisocial activity</td>
<td>12,83</td>
<td>3,85</td>
<td>13,64</td>
</tr>
<tr>
<td>Aggressive activity</td>
<td>16,31</td>
<td>4,04</td>
<td>16,84</td>
</tr>
</tbody>
</table>

**Table 5 - Averages of Stress Management Strategies in Business Professionals with Low, Medium and High Level of Tension**

On the other hand, in respondents with high level of resistance in stressful situations initiating social contact, social support search, careful activities, impulsive activities, avoidance and aggressive actions are evident behaviour models, but not dominant (see Table 6), while at the low-level resistance the dominant pattern of behaviour is assertive activity, but the lowest indicators are for antisocial activities.

<table>
<thead>
<tr>
<th>Level of resistance</th>
<th>low (n=71)</th>
<th>medium (n=25)</th>
<th>high (n=4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Assertive activity</td>
<td>23,22</td>
<td>2,92</td>
<td>21,95</td>
</tr>
<tr>
<td>Initiating social contact</td>
<td>24,26</td>
<td>2,81</td>
<td>23,24</td>
</tr>
<tr>
<td>Social support search</td>
<td>23,39</td>
<td>3,29</td>
<td>22,76</td>
</tr>
<tr>
<td>Careful activity</td>
<td>22,00</td>
<td>3,70</td>
<td>20,64</td>
</tr>
<tr>
<td>Impulsive activity</td>
<td>18,65</td>
<td>2,34</td>
<td>18,41</td>
</tr>
<tr>
<td>Avoidance</td>
<td>17,70</td>
<td>4,25</td>
<td>18,07</td>
</tr>
<tr>
<td>Manipulative activity</td>
<td>16,91</td>
<td>3,61</td>
<td>17,33</td>
</tr>
<tr>
<td>Antisocial activity</td>
<td>13,35</td>
<td>3,53</td>
<td>12,98</td>
</tr>
<tr>
<td>Aggressive activity</td>
<td>17,61</td>
<td>3,54</td>
<td>16,29</td>
</tr>
</tbody>
</table>

**Table 6 - Averages of Stress Management Strategies in Business Professionals with Low, Medium and High Level of Resistance**

Analysing stress management strategy choices in respondents with high levels of exhaustion, we can see that clearly, but not dominantly assertive steps, initiating social contact, social support search, careful activity, impulsive activity, avoidance and aggressive activity are behaviours in stressful situations (see Table 7).

<table>
<thead>
<tr>
<th>Level of exhaustion</th>
<th>low (n=71)</th>
<th>medium (n=25)</th>
<th>high (n=4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Assertive activity</td>
<td>22,13</td>
<td>2,98</td>
<td>21,94</td>
</tr>
<tr>
<td>Initiating social contact</td>
<td>23,57</td>
<td>3,17</td>
<td>22,65</td>
</tr>
<tr>
<td>Social support search</td>
<td>23,17</td>
<td>3,38</td>
<td>21,68</td>
</tr>
<tr>
<td>Careful activity</td>
<td>20,73</td>
<td>3,60</td>
<td>20,87</td>
</tr>
</tbody>
</table>
Table 7 - Averages of Stress Management Strategies in Business Professionals with Low, Medium and High Level of Exhaustion

<table>
<thead>
<tr>
<th>Stress Management Strategy</th>
<th>Low Level</th>
<th>Medium Level</th>
<th>High Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impulsive activity</td>
<td>18.10</td>
<td>2.37</td>
<td>18.74</td>
</tr>
<tr>
<td>Avoidance</td>
<td>17.58</td>
<td>3.73</td>
<td>17.84</td>
</tr>
<tr>
<td>Manipulative activity</td>
<td>16.93</td>
<td>3.13</td>
<td>17.13</td>
</tr>
<tr>
<td>Antisocial activity</td>
<td>12.88</td>
<td>3.66</td>
<td>13.06</td>
</tr>
<tr>
<td>Aggressive activity</td>
<td>16.33</td>
<td>3.88</td>
<td>16.58</td>
</tr>
</tbody>
</table>

Correlations of burnout and stress management strategies of business professionals are displayed in Table 8. Overall, results show a significant connection between exhaustion and social support search, exhaustion and impulsive actions, tension and impulsive actions, tension and aggressive actions. In some cases, only the tendency of relationships can be analysed: stress management strategies with resistance were found to have a resistance tendency - analyzing the connection between actions and assertive resistance, between social support seeking and tension, and the aggressive actions and exhaustion a weak connection was found (see Table 8).

<table>
<thead>
<tr>
<th>Stress Management Strategy</th>
<th>Correlation Ratio</th>
<th>Level of Importance</th>
<th>Level of Importance</th>
<th>Level of Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assertive activity</td>
<td>-0.003</td>
<td>0.974</td>
<td>0.089</td>
<td>0.308</td>
</tr>
<tr>
<td>Initiating social contact</td>
<td>-0.047</td>
<td>-0.078</td>
<td>0.442</td>
<td>0.775</td>
</tr>
<tr>
<td>Social support search</td>
<td>-0.184</td>
<td>-0.149</td>
<td>0.230(*)</td>
<td></td>
</tr>
<tr>
<td>Careful activity</td>
<td>0.111</td>
<td>-0.059</td>
<td>0.560</td>
<td>0.249</td>
</tr>
<tr>
<td>Impulsive activity</td>
<td>0.230(*)</td>
<td>0.029</td>
<td>0.103</td>
<td>0.257(*)</td>
</tr>
<tr>
<td>Avoidance</td>
<td>0.021</td>
<td>0.772</td>
<td>0.010</td>
<td></td>
</tr>
<tr>
<td>Implicit activity</td>
<td>0.155</td>
<td>0.111</td>
<td>0.184</td>
<td></td>
</tr>
<tr>
<td>Antisocial activity</td>
<td>0.107</td>
<td>-0.002</td>
<td>0.135</td>
<td></td>
</tr>
<tr>
<td>Aggressive activity</td>
<td>0.237(*)</td>
<td>-0.034</td>
<td>0.018</td>
<td>0.740</td>
</tr>
</tbody>
</table>

**p<0.01, * p<0.05

Table 8 - Relationship between the Correlation Ratio of Burnout and Stress Management Strategies

The dominant phase of all of business professionals is the resistance phase; the least expressed phase is tension (anxiety). Assessing the prevailing stress management strategies it can be seen that of all the stress management strategies of business professionals the highest are assertive activity, social support search, initiating social contact, as well as expression level of avoiding, while the lowest level of expression is for antisocial activities.

It should be noted that the figures show that the use of such patterns as manipulative and aggressive action are sufficiently expressed, which may be associated with a sharp expression of negative emotions in certain situations, as well as expression of unfriendly attitude. Aggressive activities have a negative emotional background compensation function as a result aggressive actions can be used to compensate a negative emotional state and negative attitude to work.

Respondents confirmed that pedagogical knowledge would be very useful for stress management. This would allow a better understanding of themselves as well as other business partners involved in the process.
Conclusion

Nowadays, the changing multicultural world raises a variety of requirements for development of social and economic interaction. The continuous struggle for redistribution of resources, social intolerance, and militant ambition for support of individuals in many European countries cause social unrest and destruction. As a result, the competition in the business environment takes place more rapidly. Constant change and transformation accompanies all levels of employees. Implementation of professional objectives and tasks nowadays requires adaptation and integration skills in all areas of operation. Synergistic cooperation within professional and inter-professional groups requires excellent communication skills, empathy, and self-reflection filled with wisdom that can positively affect people’s increasing competitiveness to a great extent.

The continuous struggle with consequences of the economic crisis of a large proportion of the people for ensuring the existence and survival of a rapidly changing world requires civic courage to accept the challenge, offers, sustainable strength, and relevant skills in increasing the efficiency of personal activities in situations of high psychological stress. When the level of psychological resistance of individuals’ decline, personal internal resources become topical that can help them positively influence fulfillment of the life and professional objectives in challenging situations. One of the inexhaustible sources of human strength is their world of values and the inner harmony. Values originate in the family; they are cultivated and developed in an educational environment, and polished in the society. Therefore, constructive social interaction among individuals is one of the most important resources of the development of values.

Activation the value resource and aspect in the context of personality education, socialization, and self-education, based on the pedagogical knowledge and abilities helps each person to become happier by revealing their personal individualized growth resources. One of the instruments of today’s business professionals for providing social interaction is clearly in the update of pedagogical knowledge.

Bibliography


11. TOPICALLITY OF LEARNING BUSINESS BASICS IN ARTS TEACHER EDUCATION

Inta KLASONE
Liepaja University, Latvia

Description of situation

The development strategy of the study division „Art” is closely related to the Scientific Strategy of Liepaja University 2010 - 2016, and Liepaja University Development Strategy 2008 – 2018, which determines that scientific research and creative activity are the main prerequisites for sustainable development of Liepaja University (Zinātniskās darbības... 2009., Liepājas Universitātes..., 2008). Liepaja University is open to international cooperation which promotes studies based on science and research, development of knowledge society and implementation of research outcomes in economy. The objective of these strategies is to provide opportunities for students to acquire qualitative academic and higher professional education in humanities and art and also in interdisciplinary study programmes related to these fields, as well as development of scientific research, creative and innovative activities in humanities and art, and support for research development and business collaboration (Zinātniskās darbības..., 2009).

Implementation of the study division Art and its study programmes takes place in conformity with the directions provided by the Sustainable Development Strategy of Latvia until 2030, simultaneously accumulating specific skills and qualifications that determine the ability of an individual to join the labour market and to develop successful professional career, but in education - to pay attention to the person’s talents, emotional and social intelligence and the process of personal development (Latvijas ilgtspējīgas... 2010). Also, in Liepaja Strategy of Cultural Policy it is suggested that in order to become a city of creativity, it must substantially improve its cultural services, ensure that cultural service providers’ are linked with the audience, substantially improving development, retaining and regaining creative abilities and promoting creative possibilities throughout the life thus increasing Liepaja special contribution to Latvia and international environment in the development of quality culture space in order to improve the quality of individuals’ lives. (Liepājas pils@tas..., 2007).

At the same time, in higher education there are several important aspects that can endanger the implementation of the above mentioned strategies in preparation of art teachers as well as professional artists. They are the following: failure to submit and implement planned international projects if the pre-financing and co-financing is reduced or subtracted; depopulation and the consequent reduction of the number of potential students; prolonged underestimation of importance of humanitarian sciences; unclear national economic situation in general; and destruction of science, research and academic
prestige by allocating insufficient funding. But there are also some strength:
stable traditions and well recognizable personalities in the educational sciences
and humanities; and also established traditions of involvement of pupils in
research and creative work in the field of arts. (Zinātniskās darbības..., 2009).

A good option is to review the study programmes in the sphere of art
education, and to perform an analytical evaluation foreseeing the potential
improvement in the context of the era through cooperation with the social
partners and engaging in business in accordance with the strategic development
needs of the city and the region. Also it is important to elaborate the
development plan for art and education division in conformity with the state
determined priorities in artistic innovation and internationally recognized
development directions in art and teachers education.

The goal of this research is to discover some significant aspects in the praxis
of art teacher education and artistic creative activities for perfection of art
education. The theoretical base of this research is formed by summarizing ideas
of pedagogues, psychologists and cultural managers, and concepts of issue-
related documents, but the practical research is based on experience gained
during the study process and the results of the survey.

Description of changes in art teacher training

In conformity with Latvia education system joining European Qualifications
Framework, lifelong education and Qualifications Framework of European
Education Area “Europe 2020”, implementation of art studies has been improved
in the content, substantial changes have been initiated in study programmes,
cooperation with employers has been improved, and the tasks for the field
practice have been coordinated with potential employers (Latvijas izglītības..., 2012). As it is stated in Sustainable Development Strategy of Latvia, nowadays
technologic competence is increasingly gaining importance together with ability
to integrate different skills and expertise, creative skills, human behaviour and
risk management skills, requiring also openness to international and
intercultural cooperation. At the same time, it is also important to raise the
prestige of the teacher’s profession. It is emphasized that in professional
programs along with the selected specialty as priority a sufficiently good
knowledge must be offered about related professions, that in the case of
necessity another profession could be obtained in accordance with the labour
market demands. The topical question remains about promoting changes in
education that stimulates imagination, intuition, emotions, and creative ideas,
develops critical thinking, and is able to generate new visions and values. The
above mentioned also applies to art teacher training, connecting this process
with acquiring the business basics: to create conditions and opportunities for
obtaining professional education; to cover the basic courses in visual arts and
management and the specific courses of the particular division; to retain links
between the theoretical and practical knowledge when working as a teacher of
visual arts and as art manager in accordance with the demands of the times.
Implementing this educational process, it is possible to differentiate several
blocks, which are valuable and related to each other (see Figure 1)
The education system is continuously developing, and also in Liepaja University various study programmes undergo transformation, which means modernization of study content and creation of new possibilities for students. The changes also affect the art teacher training. The Bachelor’s study program "Art" is being transformed into a Bachelor’s program "Photo Art". Consequently, the thematic group of the study programme changes from Education to Humanities and Arts, and the professional Bachelor degree is awarded in arts with a qualification “art photographer”. For the perfection of thematic sphere of art education, the programme "Photo Art" employs the long-term experience gained from implementing the study programme "Art". Thus, several issues are solved: the graduates have continuing education possibilities and they can obtain Teacher’s qualification already on Master’s level. This process is revealed in Figure 2.

Thus, the graduates have the possibility to connect their theoretical knowledge, practical skills and business skills, which they learn in particular courses, and obtained experience from professional field placements on bachelor’s level obtaining teacher’s qualification in Master’s level studies.
Thus, this art teacher training model creates a strong link with business study courses, work life and formation of creative society and creative industries. Also it provides a balanced understanding of the basics of entrepreneurship, qualitative art expressions and the importance of the educator’s work for the development of future society. On the one hand such orientation upholds cultural management philosophy maintaining rationality of the entrepreneurship and general economics. On the other hand, it provides obtaining specialized and professional knowledge and skills in arts. In this process the teacher has a role of a mediator, who ensures the interaction opportunities between the two sectors in practice, creating alternatives for understanding art and culture in the public space. So, in this process the teacher is as a leader. According to Berzins, good leadership means achieving the goals conscientiously and responsibly together with other people in the spirit of openness and mutual trust (Berzins).

Summarizing, it marks one of the possibilities of how to promote Latvian culture, and how to unite and consolidate the society for creation of new economic, social and cultural values, which are known and respected also in the world (Latvijas ilgtspējīgas...2010).

Teacher’s role in the context of culture and art development

Scientist J. Valbis rightly points out that in a democratic and humane society the main task of educational system is a wholesome development of peoples’ abilities and their full potential, stressing such key characteristics as readiness for lifelong learning and creative work life, and responsible participation in the social processes. (Valbis.2004).

Scientist V. Skujina defines education as purposefully organized learning of historic experience of society, acquisition and inheritance of cultural values, systematic acquirement of knowledge and skills, and personality traits building. (Skujina, 2000). It outlines a number of topical aspects in personality development, seeing equal value in the intellectual, moral, spiritual and social development. In this context, knowledge, life-skills and continuous improvement are of great importance. Art teacher has the opportunity to help the emerging personality to fully integrate in the large flow of information, in addition providing individual and community development in the sphere of arts and culture. P. Bendiksens, an expert in management and business ethics, suggests that influencing society and caring for relationships through public is a daily routine for culture and arts and it is a long-term process that requires a professional approach. (Bendiksens, 2008). Nowadays the value of art in human life is not always appreciated. Randy Cohen, the vice president of research and policy of Americans for the Arts suggests ten reasons why arts are important and should be supported: True prosperity, Improved academic performance, Arts are
an industry, Arts are good for local merchants, Arts are the cornerstone of tourism, Arts are an export industry, Building the 21st Century workforce, Healthcare, Stronger communities, and Creative Industries (Cohen, 2013).

It should be noted that at the moment art has a wide range of expressions, and its fragmentation can be observed: besides genuine traditional artworks there are new forms of art, which sometimes is difficult to even call a work of art. Although this approach is questionable since it is not possible to draw a dividing line between what the art is and what it is not. Also H. W. Holzwarth points at the diverse character of modern art, which includes shifting of artistic position and emerging of the new trends. He says that abstract painting today has once again become an open field, and many young artists work in the most varied media. (20th Century..., 2010). At present, there are various theories and philosophical concepts developed about arts, also different products and styles are created, which points to the complexity of artistic expression. At the same time, all artistic expressions affect habitat traditions, social affiliation, as well as worldview formation. P. Bendiksens states that no one can define academically precisely, what art is - is it a phenomenon, or a social sphere, or the economic benefit (Bendiksens, 2008). In general, it can be assumed that an art teacher is one of those members of the public who care about the art image. Although art has its own specific regularities, one way or another it is a clear and an open message to the public. In this age of globalization and information technology, art is an important tool for professional communication and promotion of good design of artistic and cultural activities involving the potential audience and the media. Problematic remains the question about maintaining the balance between the art form and the existing business tendencies, which can lead to the commercialization of art and can mean losing art’s essential importance for the benefit of the profit (Bendiksens, 2008). In turn, I. Berzins believes that the management does not provide the risk of art being exposed to the commercial use. The author even emphasizes the promotion and development of the artistic qualities (Bērziņš, 2006). D. Hirst has said significant words: „Art is about life, but the art market is about money”. However, it should be noted that some contradictions are arising between preservation of the particular regularities, specific aesthetic, symbolic and materialized forms in arts and its economic and rational promotion in the public space. In general, this requires a creative approach to teaching, which brings together the expertise in the profession, the rational and the spiritual. What options does the art teacher have for implementing his/her idea and addressing the public in a way that a genuine art would reach the people, enter the social space and would be accepted? In order to ensure the full inclusion of future art teachers in social processes and to prepare them for work life, the innovative forms of work must be included in the study process.

Characterization of artistic-creative opportunities in the work of the art teacher

In order to extend the educational activities, the art teacher can refer to ideas of P. Bendiksens. The author stresses two fundamental aspects: establishing contacts with individuals, groups and public institutions, this way finding financial support and engaging in positive decision-making; and elaborating assertive argumentation about the necessity and importance of art activities in the society (Bendiksens, 2008). If we look in the context of human relations, then it is possible to refer to six basic principles defined by S. Huck, which complement the words of P. Bendiksens: to reflect, to plan, to focus on action and achievements, to serve the interests of society, to create a dialogue, and to participate in decision-making (Huck, 2004). Establishing contacts and relationships do not happen intuitively, but through evaluating the individuals, groups of people or institutions, and their connection with the chosen activity.
The aid from the state for implementing artistically creative ideas is often insufficient, and basically it can be classified as financial aid for institutions or projects, or as a special support, or as a guarantee credit. Also the cooperation with the private sector in terms of sponsorship can be mentioned. Unfortunately, in praxis there are often unexpected situations, which demand from the teachers a creative problem-solving approach. Therefore, the social support is valuable, and it is also a very important factor for acknowledging viability of art and culture and their future development. The substantial framework of artistically creative activities is closely interrelated with the choice of environment. Museums have their own specific functions, which are experiencing modern changes in the context of our era. The architecturally significant sites, memorials, castles, old towns, libraries, educational institutions, and modernized environment can become places where the artistic activities are implemented. These are but a few initiatives that outline the wide range of options while maintaining the traditional approach and using the potential of latest modern technologies. Some specific activities can be mentioned such as auctions, fairs, road shows, and the Internet as a communication tool. The motivation of the target audience becomes important, as well as explaining activities, passing on the information, and involvement of participants (Bērziņš, 2006).

Modelling of art activities in the art teacher training process in Liepaja University (Latvia)

In order to find out the emerging art teachers’ thoughts on how art as a value should influence the human life, a survey was conducted. 15 first year students responded to the survey questions. Here are some of the reflections:

- The task of any artwork is to evoke emotions which we are so sorely lacking in our everyday lives. A value is something that we fear of losing. Therefore, the value of art is something remarkable, something that I would like to keep and protect.
- In my opinion, the key of how art should influence the human life is to contribute to the full development of a human person.
- The value of art should influence a person’s thinking, it has to raise emotions. Art is a cure for ignorance. Art is both – loud and quiet, pretty and ugly, but not indifferent.
- Art as a value should form people’s taste, creating interests and visions;
- Artwork should make our lives more beautiful. It must influence our aesthetic values and perception of beauty. Things, which affect us later, serve us as a template or benchmark, something with which to compare. We form a perception of what is beautiful, harmonious, aesthetic, what attracts us. We form our scale of values.
- Art must influence our moral understanding.

The obtained responses show that students understand the value of art in human life, understand its role for different life and personality development spheres, assessing its different facets.

In order to examine students’ understanding of how to implement an idea that it would successfully address the society, the work was carried out in small groups. Initially, the students in small groups of 3-5 people generated ideas with the help of consciousness mapping method. During the group discussions an application for a specific idea was elaborated. For outlining the practical implementation of the idea a diagram-building methodology elaborated by Kaoru Ishikawa Fishbone, a Professor of Tokyo University, was adapted and applied. The results of the group discussions are depicted in the Table 2.
During the research, the students showed great interest and came up with various artistically creative ideas, for example, about establishing specialized mobile art-business centres. Some examples: creating a centre "Aquarium", "PINBALL MACHINE – Hedgehog in the fog", a printing centre "TipTipTop", a tech-room "DigiDam" in which the students intend to work with the latest technologies and diverse materials, establishing a House of traditions. Here are some examples of more traditional visions: exhibitions in a virtual environment, organization of theatrically thematic events, arts and sports summer camp organization, organization of mobile workshops in historically significant sites.

The main aspects for the implementation of the ideas were the following: fundraising, targeted advertising, provision of human resources, management aspects, venue selection, supply of technology and materials. The research reveals that in the content of teacher education the basic business courses gain an increasing importance. Overall, the study reveals a connection between specialized professional knowledge and practical artistic and pedagogical abilities, and the business elements.

**Conclusions**

The main characteristics of 21st century bring to education new trends affecting the arts education in general. The nationally and locally elaborated strategic directives require changes also in arts education. In the higher education it leads to curriculum reviews of art programmes, new approaches, models, creation of the new curricula and substantive framework for preparation of future art teachers.
Art teacher has a specific role in the cultural education of society and in drawing a new cultural education outlines. The context of this century requires from emerging art teachers, who will engage in creation of future society, to see, understand and appreciate the processes that are happening in art and culture.

The acquisition of advanced interdisciplinary study content, which joins art, pedagogy and the business basics, perfects the qualification framework of emerging art teachers, extends and enriches their horizons, develops capacity to assess the conditions of a specific task and to implement activities integrating the arts in society.

Bibliography


12. STUDY PROCESS INNOVATIONS IN COMPLIANCE WITH THE SPECIFIED LEARNING OUTCOMES IN THE STUDY PROGRAMMES

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Abstract: In modern information society studies are a dynamic planning of educational activities focussed on development of new or changed human intellectual and physical capacities. The growing importance of information (information search, processing, storing, sharing, application) and information mobility promote qualitative changes in the study process – the curriculum acts as a driving force that causes the individual to identify the need to constantly update the knowledge and improve skills.

The new instructions in education significantly impact the person’s possibility to constantly upgrade the skills and competences throughout their lives and re-enter the educational system according to their needs.

The study process provides student’s self-realisation, beginning with setting the study aims and objectives to assessment of the results obtained.

No longer is the objective of the study process to give only knowledge but to encourage students for independent, critical, and reflective work as well.

The article examines the innovations at Liepaja University focusing on the expected study outcomes in the study programmes. The article analyses the attainable professional competences envisaged by the study course programmes and student survey results, in which students indicate both the positive professional competence moments in successful implementation of the study process and make their suggestions for improvement of the study process.

Keywords: Innovation, self-organisation, study outcomes, professional competence
13. AN ACCOUNT OF THE PROGRESSION MODEL FOR INITIAL TEACHER EDUCATION IN ESECD

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Abstract: In this paper we draw on the concept of Entrepreneurship Education and describe ESECD completion of the Budapest Agenda and its Progression Model for Initial Teacher Education. The concept of entrepreneurship and entrepreneurship education is discussed. We also present the reference documents on Entrepreneurship Education, but the main issue of the paper is to give an overview account of ESECD performance regarding the Progression Model for Initial Teacher Education (PMITE). In a scale of four points for twenty one items and a maximum of eighty four points, ESECD scores thirty two points, which means ten points under the average.

Keywords: Entrepreneurship, teacher education, progression models.

1 PEst-OE/EGE/UI4056/2011
14. TEACHERS’ PERCEPTION ON THE USE OF COMPUTERS IN PRIMARY SCHOOL – A CASE STUDY

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Introduction

Bearing in mind the several initiatives undertaken by the Portuguese Ministry of Education during the last years in order to provide schools, as well as teachers and children, with computers and internet access, it was considered significant to carry out a study that would allow us to get to know the real situation in Portugal, particularly, at this current moment, in Guarda’s Council. In order to obtain this information, surveys have been made, aiming teachers, children and parents. These three different surveys were applied in all schools of the public net in Guarda’s council. In this particular study, we are focusing our attention in the surveys for the teachers (vd. appendix). We intend to reveal some of the conclusions considered relevant.

Study background

Learning techniques have been changing dramatically over the last two decades. So have the information sources, the means to access, interact and exchange information and also the manner information itself changes and alters us. However, in our schools, the way we teach, the place where we teach, teachers and administrations have not changed that far. The main features of teaching institutions remain notoriously recognizable over more than two hundred years. (Goldberg & Davidson, 2010, p.8).

Over the last years, the internet has been affecting private and professional life of European citizens, offering them a growing number and variety of opportunities to access information, to acquire and exchange knowledge and to fulfill personal learning objectives. In average, 51 % of European citizens (EU27)
from 16 and 74 years old use the Internet to find information on services and goods. The use of the Internet, as far as learning goals is concerned, is also reflected in Eurostat data. In 2009, an average of 31% of the UE27 population (16 to 74 years old) is using the internet to look for information linked to learning issues, which represents an increase of 8% since 2007 (Redecker et al., 2010, p.3).

According to Goldberg and Davidson in the report *The Future of Learning Institutions in a Digital Age*, the most important feature of the Internet is its capacity to consent to the existence of a worldwide community containing never ending micro communities that provide the exchange of ideas, the collective learning in a way never seen previously. These authors support that the future of teaching institutions demands a deep epistemological reflection of all the possibilities that the Internet offers to mankind as a model of a teaching institution.

The participative learning approach includes the different ways in which students (of all ages) use the new technologies to participate in virtual communities where they share ideas, comment projects and embrace and outline, implement and foresee their own practices, objectives and data. (Goldberg & Davidson, 2010, p.12).

The educational politics in recent years in Portugal have led us to an increase in the technological resources in schools. In particular we highlight the so-called technological plan (*Plano tecnológico*) that has provided teachers with computers, schools with access to the Internet and primary school children with the well-known Magalhães. This has presented challenges and opportunities for teachers, children and practitioners.

**Methodology and results**

This is a case study where surveys and questionnaires have been used in all the public schools of Guarda’s council.

As it is a three-dimensional study – teachers, children and parents – three different surveys have been made. The collection of data demanded a previous authorization from the Ministry of Education and a second one from the coordinators of school clusters. After this initial stage, it was possible to reach the entire target population: teachers, children and parents connected to the public primary schools in Guarda. As for the surveys for the children, arrangements had to be done, concerning the presence and help of the researchers and teachers, so that we could read out loud the surveys and guide the filling in of the surveys. This was a challenge, due to the fact that children, at this age, are not comfortable with this sort of documents.

The total research and the data analysis will be divided into two different periods. In the first one, we are analyzing the results of the three surveys (children, teachers and parents) separately. Afterwards, we will cross the data collected. This current work is included in the first phase of the project and it is about the analysis and exploration of the data from the surveys of the primary teachers from the primary schools in Guarda’s council. Our goals are to analyze the data collected to the variables defined in our surveys and to answer the following questions:

- Do teachers use informatics tools (information and communication technology) in the teaching and learning process?
- Do teachers attend life learning workshops and courses in the area? What needs do they identify?
- How do they assess their own competences and their students’ in using informatics tools (information and communication technology)?
- How far did people respond to Magalhães?

With this analysis we try to describe primary teachers’ access to informatics in Guarda’s council.
Data analysis

In the data collection process, we have received 80 surveys from the primary teachers working in public schools in Guarda’s council. This is the basis of our current exploratory analysis. As far as characterization of teachers is concerned, we notice that they are mostly women aged 50 or more. (Figure 1).

The use of computers demands, among many other competences, some knowledge and ability. This is why it is appropriate to understand if teachers have attended any course in the area of computers and what exactly are the tools/expertise that they want to acquire. It is also important to realize the self-assessment teachers make of their own general competence to work with computers.

Figure 1 - Distribution of teachers by genre and age.

Thus, we have observed that 71 teachers have already attended some course in the field of computers. From these 71, nearly half (35 teachers) has attended that course in the last 5 years, whereas the remaining have attended a course more than 5 years ago. Indeed the vast majority (67 teachers) has shown some interest in attending a course in the area of informatics, having identified their needs as shown in figure 2. This remark is valid for both genders and different ages.

Figure 2 - Distribution of formation needs in the area of informatics.

It is considered extremely important that a teacher, during his career, makes his/her self-assessment as a way to identify weaknesses and strengths. This habit will allow him/her to guide his/her teaching and learning strategies and define his/her formation needs. In this sense we have asked teachers to classify their competence in using computers and some tools as common users. The scale ranged from unsatisfying, satisfying, good, very good. In this self-assessment the
The majority, equivalent to 50 teachers (64.11%), considers their competence satisfying. This is common to different ages in our sample. There is the same number of teachers (5: 6.41%) that qualifies their competence with unsatisfying or very good; these two groups belong to older age groups (figure 3).

![Figure 3 - Distribution of self-assessed competence in using computers](image)

There has been a great economic and political commitment in order to provide schools and teachers with computer equipment. This is why we have tried to observe the practical result of these politics on the ground. So, as far as using the computer equipment is concerned, the results show that from the 80 teachers that have answered the surveys, only one refers not using any of the presented pieces of equipment. The distribution of the answers in the different pieces of equipment is as illustrated in Figure 4.

It must be said that 24 teachers (30%) declare that they use the three pieces of equipment (this is to say school computer, personal computer and Magalhães).

From the answers provided, and bearing in mind the rural and urban areas, there is not a remarkable difference in the use of computer equipment among teachers working in rural areas and urban ones.
As for using the computer tools with the pupils, most teachers say they do it (68 teachers: 92%). It is also possible to see, though in a very restricted way, that the oldest the teachers are the biggest is the number of teachers not using the computer to work with children, as it shows in Figure 5.

The use of computers is connected to an enormous investment of time, effort and willingness to change which is not available to everyone (Beauchamp: 2004, 328)

More important than just using the computers in schoolwork with children, we regard as significant to examine the frequency of that use. Likewise, we can say that the majority of the teachers use computer equipment once a week (27: 44.26%), followed by a similar number of teachers who use this equipment two or three times a week (22: 36.07%). However, only 12 teachers (19.67%) use it 4
or more times a week. In conclusion, we may state that in most of the cases there is no such thing as a daily or even regular use of computers in schoolwork. In a very particular situation, there was only one situation, belonging to the age from 30 to 39 years old, referring to the use of computers. Even in this circumstance, the use was only once a week. Once more, there was no evident difference between the schools from rural areas and the urban ones.

The area preferred by teachers to use computers with children was research work. Subsequently, the preferred area was project work, as we can see in the graphic of Figure 6. These results are close to those presented by Mumtaz (2001), developed in UK primary schools, where the author concluded that at the school children use computer mainly to word processing.

![Figure 6 - Area preferred by teachers to use computers with children](image)

When we analyse the answers in terms of sections, we can see that research is the section in which there is more work developed, both in rural and urban places. In urban areas, the second section of work is the presentation of the contents of the syllabus, from the point of view of the teacher. However, in rural areas, the second is project work. When we consider age and genre, there is no particular difference to account for.

With the aim of identifying possible reasons why teachers do not use computers with children, we made a specific question. Hence, only four female teachers answered the question “why don’t you use computers with children?” One teacher said that she does not like using the computer, whereas the other three teachers answered other reasons. (The other options provided in the survey were: “I do not have access to the computer” and “the computer does not have suitable materials or contents”).

From the four teachers who have answered this question, three are more than 50 years and one is aged between 40 and 49 years old.

Three of this group of teachers are from the urban area, and one from the rural area. This piece of information does not provide a noteworthy difference.

In a previous question, there was only one teacher who said he does not use any computer equipment (in a general perspective) but that number increased up to four teachers in this last question, where it was clearly evidenced that the use of computers with children is quite limited.

From the total number of the surveyed teachers, the majority, i.e. 56 (75.68%), considers the use of computers in schoolwork important and 17
teachers (22.97%) consider it very important. We should emphasize that there is no single teacher who says that the use of computers is not important at all and only one considers it of minor importance (Figure 7). So, we can deduce that almost all the teachers who answered the question (73: 98.65%) are convinced of the importance of this use in schoolwork.

One of the questions in our survey intends to count the number of children who have joined the programme e-escolinha, in particular by buying the Magalhães computer. In this case, we can notice that in most of the classes (49: 73.13%) more than 75% have joined the programme. There was only one class in which less than 25% have joined it. The remaining six classes had between 25 and 75 per cent of children joining the programme. This programme has been under postponement since 2011. This is why 11 of the classes (16.42%) could not join the programme (Figure 8).
As far as teachers’ opinions on how well the computer Magalhães operates (Figure 9), 46 consider that this piece of equipment works well or very well. The remaining 18 consider that Magalhães does not work well or simply does not work at all.

Figure 9 - Distribution of teacher’s opinions about Magalhães.

About children competence to use the computer (Figure 10), 13 (18,31%) teachers think that children do not have enough competence to work with computers, 47 teachers (66,20%) consider that children have a satisfactory level of competence and 10 (14,08%) think they have a good level of competence, or even very good, according to one teacher (1,41%).

Figure 10 - Distribution of teachers’ opinion about children’s competence to use the computer.
About family support to children in order to help them to use computers (Figure 11), 37 teachers (52.11%) regard as a few the number of children that have family support, 32 (45.07%) think that almost all children have support and only 2 teachers (2.82%) consider that all children have it.

We remark that children make more use of the computer at home than at school (Mumtaz: 2001), which turns out to be important to know more about the family support.

Conclusion

We can conclude by saying that teachers do use some informatics tools in the teaching and learning process, although it is not a daily or even regular use of computers in schoolwork.

Teachers wish for some entrepreneurship in using the computers at school but there is an evident need of formation and technical support. This issue goes back to universities and education schools during the process of teacher training periods. Entrepreneurship and competence are paths that have to be toddled when preparing teachers for new roles in education, both in terms of technical competence and pedagogical pedagogy (Beauchamp: 2004, 344).

Teachers cannot yet show a remarkable competence in using information and communication technology, but this is undoubtedly an on-going trend. Teachers will progress eventually, but it may happen in different pace and only if there is a supportive environment.

However, nonetheless, teachers must be entrepreneurs if they wish to succeed with their student’s. On one hand, due to all the economic problems we are dealing with, we should expect less material resources in schools and, on the other hand, the students’ ability in informatics is growing.

References


Appendix

UDI - Unidade de Investigação para o Desenvolvimento do Interior
Instituto Politécnico da Guarda

Inquérito por Questionário
2011

Este questionário insere-se num projecto de investigação apoiado pela UDI tendo por tema Abordagens Interactivas na Educação. Pretendemos fazer um levantamento da utilização de várias tecnologias no âmbito da educação formal no 1º Ciclo do Ensino Básico, nas escolas do Concelho da Guarda, a fim de produzir novas competências e saberes.
Todas as informações aqui recolhidas são anónimas e apenas serão utilizadas para os fins do estudo.
Certos da vossa compreensão e empenho neste projecto, desde já agradecemos a colaboração.

QUESTIONÁRIO AOS PROFESSORES

Instruções de resposta: responda assinalando com um X ou escrevendo a resposta à questão.

1. Agrupamento: ____________________________

2. Escola: ____________________________

3. Gênero □ Masculino □ Feminino

4. Idade □ <30 anos □ 30-39 anos □ 40-49 anos □ ≥50 anos

5. Já realizou algum curso de formação informática? □ Sim □ Não

6. Em caso afirmativo: □ Há menos de 5 anos □ Há mais de 5 anos

7. Considera a hipótese de vir a frequentar algum curso de formação em informática? □ Sim □ Não

8. Assinale as áreas de formação em informática que considera frequentar:
   □ Processador de texto □ Apresentações interactivas □ Publicação na web
   □ Folha de cálculo □ Edição de conteúdos multimédia

9. Como considera a sua competência para trabalhar com meios informáticos na óptica do utilizador?
   □ Insuficiente □ Suficiente □ Boa □ Muito boa

10. Assinale os equipamentos informáticos que utiliza:
    □ Computador Magalhães
    □ Computador pessoal (que não o Magalhães)
    □ Computadores disponibilizados pela escola
11. Utiliza meios informáticos no trabalho com os alunos?  □ Sim  □ Não

Se respondeu "Não", passe à questão 14.

12. Indique com que frequência utiliza os meios informáticos, no período escolar, para desenvolver actividades com os alunos:
□ 1 vez por semana  □ 2 a 3 vezes por semana  □ 4 ou mais vezes por semana

13. Indique as áreas em que trabalha com os alunos:
□ Pesquisa
□ Realização de trabalhos
□ Contactos on-line
□ Exposição de conteúdos
□ Outras. Quais? ______________________________

14. Se não utiliza meios informáticos com os alunos, indique o motivo:
□ Não tem acesso a computador
□ Não gosta de utilizar o computador
□ Não tem conteúdos/materiais adequados
□ Outros. Quais: ______________________________

15. Considera a utilização do computador nos trabalhos escolares:
□ Nada importante  □ Pouco importante  □ Importante  □ Muito importante

16. Dos alunos que constituem a turma, indique a % que aderiu ao programa do computador Magalhães:
□ < de 25%
□ 26% a 50%
□ 51% a 75%
□ > 76%
□ Não foi proposta a adesão ao programa do computador Magalhães

17. Na sua opinião, o computador Magalhães funciona:
□ Não funciona  □ Mal  □ Bem  □ Muito bem

18. Como considera a competência dos seus alunos na utilização de computadores:
□ Insuficiente  □ Suficiente  □ Boa  □ Muito boa

19. Em relação ao apoio familiar aos alunos na utilização de meios informáticos, considera que:
□ Todos os alunos têm apoio  □ Quase todos os alunos têm apoio  □ Poucos alunos têm apoio
15. ENTREPRENEURIAL WAY OF ACTING AS A METHOD IN STUDENT TEACHERS' COMPULSORY MUSIC COURSE

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Introduction

This paper focuses on the entrepreneurial way of acting in non-business context. In this case, the context is a student teachers’ compulsory music course at one Finnish university. These student teachers are learning to be class teachers, which means teaching pupils from 7 to 12 years old. The basis of this paper is on understanding the entrepreneurial activity as a method in studying various subjects (see Neck & Greene, 2011). The European Commission (2012b; 2013) has reminded that there will not be enough work places in the public sector in the future. Therefore, it is essential that every citizen is able to achieve the experiences, knowledge, and competence about entrepreneurial activities during the whole educational path, even in basic education. The commission emphasizes the teachers’ role in enabling their learners to practice the entrepreneurial mindset and activities despite school levels (European Commission 2012b). The author as a teacher-researcher agrees with some scholars (e.g., Zampetakis, Kafetsios, Bouranta, Dewett & Moustakis, 2009), who have concluded that if the students have possibilities to practise entrepreneurial skills, e.g., creativity, during their studies, they have better intentions to become entrepreneurs in the future. In this case, the starting point is that future teachers are able to get familiar with and aware of entrepreneurial activities already as student teachers.

This research and the learning environment arrangements in the music course is based on the author’s long experience as a music teacher at different school levels in general education in Finland. This application of the entrepreneurial way of acting as a learning method in teacher education has been organized once, but it is in the process of being developed for the second time. Music as a subject makes up a very little part of the compulsory studies at different school levels in general education in Finland. This is one reason why student teachers, on average, have weak skills in music when starting teacher studies. Because of this, student teachers have two important roles during the compulsory music course. First, they act as students practicing and learning the integral knowledge and skills of music as a subject. The second role is to imagine how to teach their achieved skills and knowledge to the pupils in the basic education in the future.

During this research period, the student teachers were supervised both to experiment with different opportunities in music and to reflect on their own way of acting from the entrepreneurial approach. This paper focuses on the arrangements that enable the student teachers’ entrepreneurial activity. However, when assessing the arrangements some feedback from the students...
has been taken advantage of. Referring to students’ diversities, the student teachers’ opportunity for peer learning in the frame of the communal studying (see Valttiuori, Tuovinen, Tella, Ruokamo, Tissari & Vaattovaara, 2003) was one model of supporting diverse learners in this entrepreneurial, student-centred learning environment. The teacher remained just to give more instructions when asked. The teacher’s role as a participating supporter in mutual practices has to be developed and considered more in the future.

**Entrepreneurial way of acting**

“Entrepreneurial way of acting” refers to the entrepreneurship education. According to Gibb (2005), entrepreneurship education includes three objectives: to educate entrepreneurs, to educate citizens to understand the importance of the entrepreneurship in a society, and to educate individuals to act in an entrepreneurial way, whatever they do and wherever they act. Defining a way of acting as entrepreneurial means that the person exploits the attitudes and activities which a small-to-medium-sized entrepreneur (SME) exploits when managing his or her own enterprise (Gibb 2005). This paper focuses on the last mentioned objective: the entrepreneurial way of acting in daily practices, in studying various subjects or, finally, in working as an employee or as an entrepreneur.

According to Zampetakis et al. (2009), practicing entrepreneurial activities, especially creativity, during the education process may promote citizens to become entrepreneurs in the future. Entrepreneurship as a way to get one’s own salary will play a more and more remarkable role in the future (European Commission 2012b; 2013). However, entrepreneurship also offers an opportunity to choose the cultural environment where a citizen wants to live, e.g., exploiting the technology it is able to work almost wherever around the Europe (see, e.g., Mahlamäki-Kultanen 2005). The European Commission (2012b) has emphasized in the recent publications and guidelines that teachers are the critical success factors in the development of entrepreneurship education. Also some scholars (e.g., Gibb, 2011; Seikkula-Leino, 2011) have recognized that the first requirement for the students’ entrepreneurial activity is the teacher’s entrepreneurial mindset and way of acting.

One big challenge in developing the entrepreneurship education in different countries has been the problems in defining the phenomena. Officials, as well as scholars, and teachers have suffered from the lack of the coherent conceptual frame about entrepreneurship education (e.g. Moroz & Hindle, 2012; Mwasalwiba, 2010; Seikkula-Leino, 2011; Seikkula-Leino, Ruskovaara, Ikävalko, Mattila & Rytkölä, 2010; Shane & Venkataraman, 2000). The definition about entrepreneurship as a combination of entrepreneurial attributes, skills and behaviour (Gibb 2002) is widely acknowledged. In this research there are exploited some of these as “entrepreneurial concepts”: problem solving skills, creativity, dealing with changes, tolerating uncertainty, risk taking, intuitive, self-confidence, responsibility, cooperation skills, learning through mistakes, commitment, and perseverance (see Gibb, 2005).

Some scholars highlight the opportunities (e.g., Rae, 2007; Shane & Venkataraman, 2000) and some emphasize experimenting and reflecting in their definitions of entrepreneurial way of acting (e.g., Draycott & Rae, 2011; Jones, 2009; Neck & Greene, 2011). The opportunities can be ready made so that the actors may decide whether to exploit them or not (Shane & Venkataraman, 2000). Opportunities may also be created or developed further (Venkataraman, Sarasvathy, Dew & Forster, 2012). García-Morales, Llorens-Montes and Verdú-Jover (2006), Harkema and Schout (2008), and Lant and Mezias (1990) highlight the importance of alternatives in learning environments. However, some scholars don’t see given alternatives as opportunities, but only as resources (Korsgaard, 2011). Besides these, the widely acknowledged entrepreneurial
features are creativity and innovativeness, which are needed, e.g., when creating and developing various opportunities (e.g., Hansen, Lumpkin & Hills, 2011; Penaluna & Penaluna, 2009).

To become aware of one’s own entrepreneurial way of acting, there has to be a place and time for reflection (Neck & Greene, 2011). Reflection is the way to entrepreneurial learning, but is also an essential component of the phenomenon of entrepreneurship (Neck & Greene, 2011; Sarasvathy & Venkataraman, 2011). In teacher’s practices it is integral to try to consider his or her own action from the different approaches and to assess what kind of effect his or her activities may have on students’ way of acting (Shulman & Shulman, 2004). Schön (1987) defines the reflection after the action as reflection-on-action. Reflection during the action he defines as reflection-in-action. Considering the entrepreneurial way of acting through exploiting both of these phases of reflection is essential. The very normal reflective practice is the remembering the already finished action, when the purpose is both to become conscious of what has happened and to get ideas to test on new experiences (Neck & Greene, 2011). Because entrepreneurial activity is described to be flexible and situational (Draycott & Rae, 2011; Harkema & Schout, 2008), reflection-in-action should also happen, so that the needed changes could be made during the process.

In this research case, the requirement to notice and support the student teachers’ diversities is considered through Valli’s (1997) two types of reflection: deliberative reflection and critical reflection. Valli defines reflection as deliberative if the teacher is weighing competing viewpoints and research findings concerning the whole range of education, e.g., students, the curriculum, strategies, and organization in the classroom. When the teacher is judging the objectives and purpose of schooling in light of social justice and equality of opportunity as the basis in the social, moral, and political dimensions of schooling, the reflection can be defined as critical reflection (Valli 1997). When the discovered and created opportunities are experimented with and then the reflected knowledge and skills are applied in new situations and contexts, this whole process produces competence (Mitchelmore & Rowley, 2010).

Much energy and time has been spent in the attempt to find suitable definitions for entrepreneurship education in various contexts. In this research, the author agrees with the contextual approach for entrepreneurship education, which reminds scholars to notice and describe in various contexts when, how, and why entrepreneurship happens and who becomes involved (Johns, 2006; Welter, 2011). Some scholars have also recently focused their research on searching for the polyphonic voices that make up the diverse field of defining the entrepreneurial process (Moraz and Hindle, 2012). Besides, the policy programmes have recently focused on a very wide definition of entrepreneurship education and entrepreneurial mindset and activities in general (see European Commission, 2012b).

In Finland, the instructions for noticing and exploiting the entrepreneurial way of acting have been written in the national curricula for basic education since year 1994. Besides, the Finnish Ministry of Education (ME 2009) has formulated the “Guidelines for entrepreneurship education”, in which the entrepreneurial attitudes and activities are instructed to be noticed and enacted through the whole Finnish education system. Despite these orders, entrepreneurship education has not yet been extensively included as a part of daily practices at the Finnish comprehensive schools (Seikkula-Leino 2011; Seikkula-Leino et al. 2010).

**Student teachers as diverse learners**

Taking care of learners’ diversities is defined as an inclusive approach to pedagogical solutions (Karagiannis, Stainback & Stainback, 1997; Loreman, Deppeler & Harvey, 2010). Inclusive education is nowadays most often defined
as “education for all” because all individuals differ from one another, not just individually but also socially and culturally (Armstrong et al., 2010; Black-Hawkins, 2010; Engelbrecht et al., 2006). When the teacher arranges a learning environment from the entrepreneurial approach, the essential learners’ activities are, e.g., experimenting various opportunities (Harkema and Schout, 2008; Jones, 2009). Then both the teacher and the learners have to take risks, tolerate uncertainty, and be innovative in solving problems. Some of the attributes, skills, and activities exploited in this research are related to those of small-to-medium-sized entrepreneurs (SME) when he or she is managing the business (Gibb 2002; 2005). Therefore, the learning environment where the student teachers are able to experiment various opportunities and reflect on their entrepreneurial ways of acting is here called an entrepreneurial learning environment.

Neck and Greene (2011) remind us of “the soft stuff”, referring to, e.g., social responsibility when including entrepreneurial elements in a non-business education. Jones and Iredale (2010) warn teachers about considering entrepreneurial practices as omnipotent keys to every pedagogical challenge involving diverse learners and various learning situations. For example, overemphasizing each learner’s individuality may lead him or her to an individualistic mindset that devalues others in communities (Jones & Iredale, 2010). The crucial point in the moral aspect in entrepreneurial learning environment in non-business education seems to be in each actor’s equal right to experiment all opportunities and participate in various communities (see Anderson & Smith, 2007; Deng, 2010).

According to Loreman et al. (2010), the inclusive approach to teaching arrangements means flexibility in many things, e.g., in content, learning methods, needed time, and communal arrangements. They instruct teachers to use cooperative learning strategies and a variety of modes for learning activities, to differentiate the time according to learners’ needs, and to incorporate learner-centred problem-solving strategies wherever possible. In addition, they remind teachers that learners’ peer tutoring offers opportunities to learn and interact in mutually supporting ways, which provides modelling of academic and social skills (Loreman et al., 2010; see also Engelbrecht, Oswald & Frolin, 2006).

During the last four years, while teaching at the university level, the author has noticed many kinds of diversity among the student teachers. As the obvious result from the minor amount of music studies before teacher education, the most challenging diversities are the huge variations among student teachers concerning their musical knowledge, abilities, and skills and even attitudes, values and interests.

Some facts about the teacher education and the compulsory music studies

In the Finnish educational system (see the Appendix) the most common way to graduate as a teacher for general education is through basic education, general upper secondary school, and the bachelor’s and master’s degree studies (300 ECTS) at the university (ME 2013). The context in this research is class teacher education at the university level. However, it is necessary to recognize the context of the basic education as a coming teachers’ environment in the future. When contextualizing the entrepreneurial learning process, Welter (2011) has defined the multiplicity of context. This research focuses on the university context, which is, according to Welter, one model of the institutional contexts. Besides, inside the institutional context the time context is noticed because of the student teachers’ present university context and the forthcoming basic education context. At the European level, the whole Finnish educational system composes a special kind of cultural context, especially including the teacher education only in the higher education and at the master’s degree level. The entrepreneurial way of acting differs in various contexts (Baumol, 1990). In this paper, this issue has
been dealt with considering the context by noticing the questions, when, how and why entrepreneurship happens and who becomes involved (Johns 2006, Welter 2011).

In teacher education in Finland, it is integral that every student teacher studies the basics of all the subjects he or she may teach at school in the future. These subjects are defined in the instruction of the subjects in the distribution of lesson hours in basic education (NBE 2004a). Besides, there are instructions concerning so called cross-curricular themes in the national core curriculum. One of these themes is Participatory citizenship and entrepreneurship. The main objectives of this theme are “to develop the capabilities needed for civic involvement and to create a foundation for entrepreneurial methods” (NBE, 2004b). Music is one of the subjects that are required during the first six grades, where class teachers are responsible for teaching the subject. At the researched university the extent of the compulsory music studies is 5 ECTS. The researched part of compulsory music encompasses about 0.5 ECTS. Next time (in November 2013) the extent of this entrepreneurial music period will encompass 1 ECTS. The objectives in the compulsory music course, “Basic path of the music”, are to understand the base-beat and its role in music and to learn the names and the time-values of the notes. The researched lessons are a part of this course.

Finnish teacher education is grounded in the way of thinking that future teachers have to get experience by themselves about different learning methods as student teachers to be able to exploit them as teachers in the future. Teacher education at the researched university is grounded on the principles of inclusion and communalitv and emphasizes teaching as a profession that is reflective, so the teacher is able to develop his or her own work through researching (UL, 2013a). According to the strategy of the whole university, the focus of the teaching and studying are on the, e.g., sustainable development, well-being, and the equality at the local, regional, and international levels (UL, 2013b).

Methodology

This research is a case study and it represents the one special type in the action research field, the teacher as a researcher, where only one teacher researches her own work (McGlinn Manfra, 2009). Before this university context, the explored model of the music learning environment arrangements to support entrepreneurial activity has been organized at the basic school level. The author has written a doctoral thesis about the case study in the basic education context, which concerned the first version of the model (Hietanen, 2012), and then applied the model to the student teachers’ compulsory music course.

The purpose in this study is to interpret and apply entrepreneurial way of acting in non-business education at the higher education level as a learning method. The first research question deals with the arrangements that may support the student teachers’ entrepreneurial way of acting during the music course. The teacher-researcher’s interpretation of the entrepreneurial activity includes, e.g., experimenting alternatives and creating opportunities, which require students’ self-directive learning process. Therefore, the other research question focuses on how the student teachers’ diversities are noticed and supported during the music course.

The data consist of the author’s diary notes about the arrangements and plans concerning the music learning environment before each of the six lessons and the reflection on action after the lessons (see Schön, 1987). The data were collected in January and February 2012. The analysis is based on the teacher researcher’s reflections, where she uses two of Valli’s (1997) five reflection types: deliberative and critical reflection. According to Welter (2011), the context is important for understanding when, how, and why entrepreneurship happens and who becomes involved. Also this definition is noticed in this research.
Entrepreneurial features of the course

The researched part of the course was mainly organized as practical training situations, including mostly playing with the instruments that are used in Finnish schools. In this research, the teacher-researcher had organized many alternatives and freedom into the music learning environment, according to her interpretation about entrepreneurial ways of acting. On the whole, the learners were encouraged to make decisions on what, to what extent, when, and with whom they learn. Entrepreneurial practices build not only on each participant’s individual rights but also on their networking and negotiation skills (e.g., Gibb, 2005; Jones & Iredale, 2010; Neck & Greene, 2011; Rae, 2007). Therefore, the teacher encouraged learners to practice peer support when some of them learned a task faster than the others. The learning process in which the group of learners is seen as a little community, in which the experiences and the mutual trust are shared, may also be defined as a communal studying process (Vahtivuori et al., 2003).

The student teachers studied music in two groups of three to five persons in neighbouring rooms and the teacher walked between the rooms supervising students when they asked. Before these group lessons each student had studied piano, playing about 10 lessons with his or her pair. The student teachers had a lot of freedom in tasks, because the teacher gave only the theme (e.g., to create patterns of rhythms by playing), instruments and some other material, e.g., the notes of the songs. They were allowed to create how to act in the offered circumstances. These opportunities were designed to respond to the entrepreneurial requirement of flexibility and creativity (e.g., Draycott & Rae, 2011; Harkema & Schout, 2008; Zampetakis et al., 2009). During each lesson, the student teachers were supervised in their two roles: first, as a student studying and learning musical knowledge and skills and, second, as a coming teacher considering the ways of teaching the achieved knowledge and skills to pupils. They were informed which skills and knowledge were adequate to learn to teach the music at school and which skills were good additions. Every lesson but the last one, lasted 45 minutes and they were organized once per week. The following table shows the main objectives, available instruments, and the main given orders in each week.

<table>
<thead>
<tr>
<th>Week No.</th>
<th>Main Objective</th>
<th>Main Instruments</th>
<th>Additional Instruments</th>
<th>Pre-Orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>to understand a concept and the role of base-beat, to strengthen the achieved piano skills</td>
<td>body percussion, piano</td>
<td>percussion instruments</td>
<td>to create own patterns of rhythm alone or with others</td>
</tr>
<tr>
<td>2</td>
<td>to understand a theoretical basis on the created patterns, to understand the role of a tempo (velocity)</td>
<td>body percussion, percussion instruments</td>
<td>-</td>
<td>to create one’s own patterns of rhythm, to write all patterns down, to create common connections of these smaller patterns</td>
</tr>
<tr>
<td>3</td>
<td>to understand how to find scales in playing an electric bass</td>
<td>acoustic guitars</td>
<td>-</td>
<td>the names of the strings, the role and the system of the frets (in scales)</td>
</tr>
<tr>
<td>4</td>
<td>to strengthen the understanding of the scales on the neck, to understand the relationship with the written chords for guitar and the neck of the guitar</td>
<td>acoustic guitars</td>
<td>-</td>
<td>to exploit the knowledge achieved in previous lesson: the role of the frets, to practice how to find some written chords on the neck</td>
</tr>
<tr>
<td>5</td>
<td>to learn one very basic beat with the drums</td>
<td>“Body drums”, drums</td>
<td>acoustic guitars</td>
<td>the supervised experiment on the beat by “body drums”</td>
</tr>
<tr>
<td>6</td>
<td>to apply the achieved knowledge and skills in various songs to</td>
<td>piano, percussions, acoustic guitars,</td>
<td>recorders, xylophones</td>
<td>to focus on both playing and on teaching</td>
</tr>
</tbody>
</table>
The opportunities are integral elements in the entrepreneurial way of acting (e.g., Rae, 2007; Shane & Venkataraman, 2000). In this learning environment they were given as alternatives (see García-Morales et al., 2006; Harkema & Schout, 2008; Lant & Mezias, 1990), but the student teachers were also encouraged to develop them more and even create their own ones (Penaluna & Penaluna, 2009; Venkataraman et al., 2012). One example of the alternatives given and being developed more comes from the first lesson. There was just one kind of notes in each pattern the teacher gave. After clapping these simple patterns of rhythms with hands, most of the student teachers wanted to develop and reformulate the patterns, which mostly happened through experimenting, reflecting, and negotiating together in the group.

The student teachers didn’t have to exploit the given alternatives at all (see Shane & Venkataraman, 2000), if they could practice and learn the purposed musical theme through the opportunities created by themselves. One example of this was the teacher’s advice at the first lesson to begin the practice through playing all the given rhythms, but in some of the little groups the students showed that they didn’t need to. Another example comes from the third and fourth lessons, because some student teachers already knew how to play bass or guitar. The teacher prepared for this situation by designing various tunes for bass and offering many different chords for guitar. Some of the chords were easy and some difficult to play. The students were also encouraged to create their own bass tunes and to experiment to add some chords between the given ones. By these arrangements, the teacher gave an opportunity to the student teachers to act in an entrepreneurial way, but at the same time she could offer alternative tasks to diverse learners (see Black-Hawkins, 2010; Loreman et al., 2010). Besides, the students were able to exploit the knowledge and interests that they had achieved and noticed outside the classroom, which is essential in entrepreneurial activity (e.g. Rae, 2007).

Reflection is an integral component of the phenomenon of entrepreneurship and it also the way to become aware of an entrepreneurial learning process (Neck & Greene, 2011). During the researched music lessons, the student teachers were encouraged to start and sustain reflective dialogues. The teacher ordered the students to ask a lot of questions and she also asked some questions. The purpose was that both musically and in some other way, diverse students could have the needed support and through teacher’s questions the student-centred activities could be connected into the curricula (see Black-Hawkins, 2010; Loreman et al., 2010). The entrepreneurial way of acting is defined in very many ways. So the teacher-researcher gave some entrepreneurial concepts, from which after every lesson each student teacher had to choose the ones which he or she had felt as the strongest in the music learning process. So the entrepreneurial focus was on the learning method, in fact on how to study music (see Neck & Greene, 2011; Welter, 2011). Those entrepreneurial concepts came mainly from Gibb’s (2005) definitions and they were: problem-solving skills, creativity, dealing with changes, tolerating uncertainty, risk-taking, intuitive, self-confidence, responsibility, cooperation skills, learning through mistakes, commitment, and perseverance.

Cooperation skills are integral both in entrepreneurial way of acting (e.g. Gibb, 2002; 2005) and within diverse learners. From the inclusive approach, the cooperational activities are often defined as peer learning, peer supporting, and peer tutoring (e.g., Loreman et al., 2010). In this case, the student teachers, who had either played before or just happened to learn faster than the peers, began to advise others. This way they could have an experience about the musical skills or

<table>
<thead>
<tr>
<th>Objectives, instruments and pre-orders in music lessons.</th>
<th>through both personal and common &quot;creative mindset&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>develop one’s own musical competence</td>
<td>drums, electric bass</td>
</tr>
</tbody>
</table>

Table 1 - Objectives, instruments and pre-orders in music lessons.
knowledge from the new approach, which enabled a deeper competence to these “peer teachers” (see Mitchelmore & Rowley, 2010). The student teachers negotiated a lot while practicing and also assessed their products after experimenting various opportunities. So their continuing reflections during the studying processes may be defined as reflections-in-action (Schön, 1987). Through this continuing negotiation and reflection, the student teachers were able to specify and even to change both their personal and communal objectives, which are features of the communal studying process (Vahtivuori et al., 2003).

For the first five lessons, the student teachers studied in very little groups, about four students in each group. The sixth and the last lesson lasted 90 minutes and was organized in the normal music classroom. There were about 16 student teachers studying at the same time. The teacher had brought all the practiced songs from the previous lessons with her and also a couple of new ones. There were also a lot more instruments in that classroom than before in those little training rooms. In this bigger group, the student teachers were given a lot of space to make many kinds of decisions concerning each other’s learning and applying the achieved skills to new situations: new songs and instruments, new peers, etc.

During this last lesson every student teacher experimented with widely varying alternatives and created new opportunities alone and with peers. The reflective negotiation was an essential part, including a common assessment of the products and the learning process. Each student strengthened his or her own musical competence through applying the achieved skills and knowledge in new circumstances. Besides the active participation, each student was allowed to just observe others' way of acting. So they were able to decide how to study, when to practice, and with whom. This decision-making process concerning each student teacher's own way of acting during the learning process may be defined as managing one’s own studying and learning (Jones & Iredale, 2010).

**Discussion**

The first research question was: What kind of arrangements may support student teachers’ entrepreneurial way of acting in the compulsory music course? This question is considered through Valli’s (1997) definition about the deliberative reflection. This means that the focus is on the strategies, curriculum, organizations, and roles in the classroom and the interaction between the students and the teacher.

The instructions of the European Commission (2012b; 2013) may be considered as the widest strategy in this research. According to the European Commission’s latest publications, teachers are the critical success factors in developing entrepreneurship education. In this research, the teacher-researcher’s arrangements and supervising practices concerning the compulsory music course responded quite well to the requirement that entrepreneurship education should be an intrinsic part of initial teacher education (see European Commission, 2012b). The ordered incorporation of experiential practices and the other entrepreneurial activities as competences for life (European Commission, 2012b; 2013) has been the basis of the arrangements and in supervising the student teachers' learning processes during this course. The teacher's role both as an organizer and facilitator with an “entrepreneurial mindset” and as the researcher adheres to the suggestions of the European Commission (2012b). Also, considering the strategy of the researched university and the teacher education, the requirement of the equal opportunities and social justice of participating citizens (see UL, 2013a; 2013b) were noticed. Namely, despite the diversities within the student teachers, both the given and the created opportunities were offered to everyone to be experimented with (see, e.g., Draycott & Rae, 2011; Harkema & Schout, 2008; Venkataraman et al., 2012). In addition, every student teacher was able to participate in various communities
As described before, the teacher gave the theme, instruments, and some essential information and pre-orders about the task. Then she walked between the two studying rooms answering the presented questions. The teacher gave the freedom, where the multiple differences concerning, e.g., the student teachers’ different learning habits, differences in required time, and different phases of the instrumental skills and knowledge in music, had space. Whether there was enough space for every kind of diversity and, on the other hand, enough timely support stayed a bit hidden in this research, because it should have been asked in an added questionnaire after the teacher had read the answers of the first questionnaire. In the first questionnaire the question was: What entrepreneurial elements you have noticed when studying music? Some of the students described the challenges, when the teacher had not given the exact orders:

“We have been left alone with tasks, although the teacher was near.” (ST6)

“The biggest challenge was to adopt my own playing with others.” (ST8)

“Now and then the feeling has been confused and uncertain...finally the communal studying was the only wise activity.” (ST9)

Some students have obviously felt that the support of the teacher did not come in right time and that it wasn’t sufficient. The sufficiency of the support and what way the student teachers got it should have been asked with more specified question. However, when collecting the data, the teacher was just researching the entrepreneurial activity without the inclusive approach, which left this essential approach to be examined more in the future.

The teacher continuously encouraged the student teachers to support each other. The communal studying with the common specifying concerning the objectives and developing the given ideas and creating the new opportunities in cooperative negotiations (see Vahtivuori et al., 2003) was one of the teacher’s entrepreneurial objectives in these learning environment arrangements. The cooperative networking and negotiation skills are essential in the entrepreneurial way of acting (e.g., Gibb, 2002; 2005). This peer support was manifested throughout the lessons and no-one was left behind, which was a very inclusive practice (Loreman et al., 2010). Despite the various differences between the students’ musical skills, knowledge and interests, most of them advanced enough academically to be able to teach music at school (see Black-Hawkins, 2010). This has been proved during this academic year 2012-2013, when these student teachers had their teacher training period at the teacher training school.

The essential ways of supporting the student teachers’ entrepreneurial activities were the reflective negotiations both during and after the learning processes, to facilitate the student teachers to construct the knowledge (see Draycott & Rae, 2011; Sarasvathy & Venkataraman, 2011; Schön, 1987).
addition, the students applied the achieved knowledge in new situations, through which they could manage their learning process and competence (see Mitchell & Rowley, 2010). By reflecting and assessing their own studying processes from the entrepreneurial approach by the given entrepreneurial concepts (e.g., creativity, risk taking, and cooperative skills) the student teachers could become aware of the multiplicity of the opportunities in the entrepreneurial activity.

Conclusions

From the contextual approach, the question of why entrepreneurship education happens (see Johns, 2006; Welter, 2011) has been answered on the European level in the suggestions of the European commission (2012b; 2013). Added to these orders, there are more specific instructions for entrepreneurship education in many European countries, for example, in Finland (European Commission, 2012a; ME, 2009; NBE, 2004b). There are two main reasons why the student teachers in initial teacher education should already be able to experiment with the entrepreneurial way of acting as a method during their studies and to reflect on their activities from the entrepreneurial approach. The first reason is that without the research-based wide view and knowledge about the entrepreneurial way of acting and entrepreneurial attitude, it is obvious that the practical interpretations and appliances are going to be too narrow, focusing only on the business managing part of this huge phenomenon (European Commission, 2012b). Another reason is that being able to have personal experiences with different learning methods during their teacher studies is integral to becoming teachers.

When contextualizing the entrepreneurial learning process, it should also be considered when and how entrepreneurial activities happen and who becomes involved (Johns, 2006; Welter, 2011). In this case, it was suggested that the entrepreneurial way of activity happens in each phase of the learning process: from the teacher’s mindset in planning the lessons and arranging them and during the studying process, both in interactions and individual decisions. In answering the question how, the starting point was that the teacher planned and organized many kind of freedom into the learning environment and to the ways of acting. Besides, the reflection in many ways and phases of the learning process was an essential activity in student teachers becoming aware of what the entrepreneurial activities may include. Despite staying hidden to some extent as a research task, one important approach in this research case composed the goal of the last contextual question: Who became involved? There should be no other answers than: Each diverse learner became involved.

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1. Introduction

We live in a global socio-economical environment that shares the defense and promotion of the entrepreneurship spirit. The present crisis of social values and of the economy and financial markets (Applegate and Harreld, 2009) pull everyone to fight the unemployment. The fragility of the richest nations affected by the problems felt in economical groups, are going to raise the voices around the new generations and hope for new small and medium size enterprises (Wattanaputtipaisan, 2002/2003; Reynolds, 1997).

The recent expansion of markets and increased standardization has not, as might be expected, been associated with an expansion of the role of large firms. Recent data on new and small firms in the global economy (...) The advanced economies of the future will not be dominated by old, large firms. (Reynolds, 1997).

The need to combat the growing unemployment rate in the western societies (Bover and Gómez, 2004), the apprehension created by the displacement to others countries of factories and structures of the big economical groups (Dawson, 1987 cit by Young 2011; Teece, 1985), make the rulers focus efforts in the development through the creation of new investments and new businessmen. The politics and appeals are directed to the new generations to provide solutions and dynamism that will accelerate the economical environment, through the creation of new companies (Arnett, 2000).

2. Concept

The concept of entrepreneurship is associated by many authors to Chantillon (1755) and subsequently to Say (1803, 1815, 1816, 1839) but with Schumpeter (1928, 1954) the concept was consolidated. For Schumpeter the Entrepreneurship is associated to innovation and economical development. The entrepreneur is who modifies the existing economical order through new products and services, or by the creation of new forms of organization or resources exploitation (1949). For Gartner (1988) the expression is understood as new organizations creation. However, the concept of entrepreneurship has
been object of multiple studies to define the characteristics of these individuals, the factors that influence them and their social environment origin (Gibb, 1993). The literature produced about this subject have been huge, with thousands of publications, conferences and others events that promote these matters (Filion, 1998a).

It’s important to identify and associate the reasons that encourage the appearance of entrepreneurs and the identification of their characteristics. In an economical vision Baumol (1993) distinguishes the entrepreneurs between business organizers and innovators and considers the last ones as decisive in economies.

In the behavior vision of Max Weber (Brouwer, 2002) and McClelland (1961) entrepreneur are seen as innovator and independent individuals that have achieve self-realization and power translated in the need of business management and who are prepared to assumed some risk (Brockaus, 1982). The role of ideologies defended by Weber (1930), Tawney (1947), Burdeau (1979), Kennedy (1988), Toybee (1976) show that a big range of factors explain the development of societies and civilization.

Some researchers believe that characteristics of the entrepreneurs are innate and stimulation or training these characteristics in individuals would not transform them in entrepreneurs (Nicolaou et al., 1979; Hornaday, 1970). However stands out from the majority of the author’s opinion that Human is a social product and will have tendency to copy models and will choose the model that will valued in society prompting to the appearance of new entrepreneurs in the economical and be social environment where he grew and become adult. Filion (1998a), Gnyawalli and Fogel (1994) presuming one society with several entrepreneurs encourages the appearance of more individuals that will follow that road.

Nevertheless the researchers of personality lines identified an assembly trace present in many entrepreneurs although have been not possible to establish a scientifically viable psychological profile (Filion, 1988a; Krueger, 2006, Krueger NF, Brazeal D, 1994).

3. Characterization

One of the questions that need to be explored is the nature of the entrepreneurs, and identification of their characteristics. Witch factors contribute to their way-of-life and how to implement these attitudes?

It will be possible that characteristics are part of the personality of some individuals obtained through the genes or through the environment with particular conditions that may lead to this attitude of an entrepreneur?

Theoretically the entrepreneur spirit is something multidimensional that include:

i) Personal Values;
ii) Characteristics as creativity;
iii) Positive attitude;
iv) Innovation and change;
v) Self-confidence;
vii) Leadership;
vii) The acceptance of failure as a source of experience;
viii) Attitudes of cooperation and work in team;

To Drucker (1998) entrepreneurs working in a company are doing today the business of the future, transforming the enterprise in a different business permanently. For him, there are inherent qualities between business owners and entrepreneurs (Dornelas, 2001):
a) Initiative;  
b) Vision;  
c) Audacity;  
d) Need for achievement;  
e) Decision;  
f) Teamwork;  
g) Organization and Leadership;  

But more features are pointed to entrepreneurs (Hornaday, Abound, 1971; Meredith, Nelson and Neck, 1982; Timmons, 1979):

1. Innovation;  
2. Leadership;  
3. Moderate risks;  
4. Independence;  
5. Creativity;  
6. Energy;  
7. Tenacity;  
8. Originality;  
9. Optimism;  
10. Results orientation;  
11. Flexibility;  
12. Ability for drive conflicts;  
13. Need to achievement;  
14. Self-consciousness;  
15. Self-confidence;  
16. Long term involvement;  
17. Tolerance to the ambiguity and uncertainty;  
18. Initiative;  
19. Capacity of learning;  
20. Ability in the resources use;  
21. Sensitivity to others;  
22. Aggressiveness;  
23. Trust in persons;  
24. Money as measure of performance;  

Based on this sort of characteristics we can say that everyone has some of them, so all we have a lot of entrepreneurs.

4. Who is Entrepreneur?

Exist several perspectives as Dinis and Ussman have presented (2006), economical perspective views them as the primary element for development and growing for economies. Seen as an organizer and a decision maker (Say, 1939). Shumpeter (1934) associated the innovation and discontinuity to introduce new ways of organizing production and differentiation of other functions in organizations. Leibenstein (1968) and Kirzner (1973) see the entrepreneur as someone who seeks opportunities in the market and achieve the equilibrium of markets by pro-active and not routine behavior. According to Degen (1989), the successful entrepreneur is the one who knows and can systematically apply management techniques, not depending solely on the “luck” factor.

The personal characteristics approach focuses on the individual characteristics (Green, R., David, J., Dent, M., 1996; Wislow, Solomon, 1989), motivation (McClelland, 1965, Manimala, 1996) and attitudes (Veciana, 1999). To Brochaus, Robert and Horwitz (2002) the most determinant characteristics of entrepreneurship for an attitude of autonomy and action are:

1. Initiative – because acts, doesn’t wait for something or someone to go with him, “he moves, goes after what he needs”;  
2. Self-Confidence – he his is own belief and accepts challenges;
3. Acceptance of the risk – is something natural although controlled;
4. Decision and responsibility – the entrepreneur decides and accepts responsibility of his choice – don’t blame others;
5. Self-motivation and enthusiasm – thinks often about his actions and how to do it;
6. Control – believes that accomplishment depends on itself and that he can influence the environment to achieve his objectives;
7. Team Spirit – delegates and believes that only with collaboration will achieve results;
8. Optimism – believes the world offers to him everything (everything that happens represents one new and different opportunity);
9. Persistence – continuously fight for what he intends (perseverance);

To each disciplined effort there are several rewards
Chinese Proverb

Several authors share that is central to entrepreneurship skills of his capacity of decision, and something individual and the entrepreneur interacts, reflects, sees every moment as a discovery and develops specific skills for the success of your choice that is your responsibility, exclusive and unique. Decision is individual:

According to Cohen (2001), there are eight styles of decision associated with the process and characteristics of entrepreneurship:

The intuitive: He is going to project the future, with perspective to the medium and long run imagining the impact of that action;

The planner: situates himself where he is and where he is going to, with planning and with a trial of accompaniment, adapting to the reality whenever will be necessary;

The perceptive: says that beyond the perception knowledge is required;

The objective: knows which problem needs to be solved;

The collector: is sure about information, sees the importance of measure and correction when the result is not the expected;

The worker: involves personality and directly believes in groups for multidisciplinary studies;

The meticulous: collects opinions from friends, specialists and staff members to be convinced of the solution he looks for;

The Strategist: decides to fulfill his strategy of growth having perception of what to solve. Diagnoses the problem to find a solution with efficacy.

Empinotti (1994) argues that there must be a reference to values that may be existential, aesthetic, intellectual, moral and religious to be an entrepreneur. It is necessary, however, to consider that, in a business context, these characteristics can be developed or act positively or negatively. The personality of entrepreneur will define the decisive impact for the success. This vision is established in accordance with risk-taking and it is assumed that not all people have the same ability. It presumes that is not entrepreneur whom wants a regulated life, certain schedules, salary guaranteed in the end of the month. The entrepreneur assumes risks and his success is on the “capacity of live with them and survive to them” (Degen, 1989, p.11).

Gerber (2004), identifies some differences of the three personages that correspond to organizational roles which are:

a) The Entrepreneur transforms the most trivial situation in an exceptional opportunity, is visionary and dreamy; the fire that feeds the future; he lives in the future, never in the past and rarely in the present; in the business world is innovative, a great strategist, the creator of new approaches to new markets;
b) The Administrator is pragmatic, lives in the past, thinks in regulation, creates plans extremely organized for everything;

c) The executor, is going to repair things, lives in the present, is satisfied in controlling the workflow and is a determined individualist;

It is important to detach the thought of Gerber (2004) the factor of the three personages will be in eternal conflict. In the minor failure the technician takes out of everything, kill the visionary, the dreamer, the creative personage that always is dealing with the unknown. The risk is part of any activity and is necessary to learn how to deal with them. However, all these characteristics are present in everybody. Although is necessary to highlight or coach these competencies to find our entrepreneur characteristics.

5. Build One Entrepreneur

Universities are now the essential training ground to build entrepreneurs.

According to Morthy (2003) higher education has, among other things, intended to stimulate the creation and development of cultural and scientific teaching of reflective thinking, encourage research and stimulate scientific knowledge of the real problems establishing a reciprocal relationship with the community.

For Drucker university need to arrogate its role in the training of individuals making has an understanding of "ciência e da dinâmica da tecnologia." (p.544), science and technology dynamics.

To Etzkowitz (2001) universities should encourage their students to take initiative and entrepreneurial spirit and cultivate or feed the entrepreneurial culture.

Universities offer psychological support to potential entrepreneurs, encourage self-fulfillment, autonomy and initiative and with incubators or pre-incubators as are the laboratories facilitate the performance of the university in the economic development.

To Guarany (2003) the entrepreneurial university aims to teach, research and the economic development, as well form resources to the market, create new businesses and provides entrepreneurial training articulated as an additional area of competence (p.240).

According to Horne et all. (2010) “University graduates have enormous potential for innovation and economic development. Mobilising them for entrepreneurial careers, enhancing their entrepreneurial skills and providing support for their business start-up are important.” (p.3).

There are doubts about the benefits of entrepreneurship education (GIBB, 1999), both with regard to the benefits for students (Chell, Allman, 2003), or as to the effectiveness of it (Hytti, O’Gorman, 2004), but the reports of European entrepreneurship speak of the need to continue taking steps to strengthen this type of training (European Comission, 2006).

Then means that it is the obligation of teachers being able to teach and promote entrepreneurship for better and more businessmen, administratively and technically, as a way to promote an increase in wealth of the country (Dornelas, 2001).

The process of business creation is an activity that involves the discovery, evaluation and exploitation of opportunities to introduce new products and services, new forms of organization and new testing and materials (Venkatarama, 1997; Venkatarama and Shane, 2000).

The business process starts in the perception of opportunities or in situations where resources can be combined to obtain a potential benefit. Develop one plan to explore opportunities is the path to entrepreneurship. Must face the uncertainty from the front (and Khilstrom Laffort, 1979), have tolerance to imprecision (Shere, 1982) and assume the need to achieve the defined goals (McClelland, 1961).
Develop the skills relate to the needs, knowledge, skills and values that should be worked on three essential aspects mental, professional and economical or management.

We need to prepare the **mentality** (Emotional and Intellectual) of entrepreneur:

**Emotional:**
- Fostering Self-esteem, auto-confidence, potential of achievement;
- Develop emotions and positive attitudes to business, clients, environment, activity process, and even help treat competitors as something natural;
- Discuss and debate ways to control fear or fear of the unknown;
- Discuss with young people's attitudes to assume control of illusion and anxiety;
- Develop positive attitudes;
- Warn and alert to maintain motivation and discipline;

**Intellectual:** Awakening to rationality, to face situations impersonally, to ensure attitudes of responsibility and always encourage a holistic view or integrated parts of the system or business;

We need to prepare **Professionally** the entrepreneur:
- To know and think about the future of the business;
- Provide tools and knowledge management;
- To think of leadership as a permanent activity of the business always follow closely, continuously assess, guide individuals involved and lead by example;

We also need to prepare the entrepreneur in **Economical** terms;
- To meet the economic reality of the country where he want to work;
- To meet the needs of the knowledge, Lizana, (1995, p.78) argues that we should teach:
  - technical aspects related to business;
  - Discuss and teach the shopping experience;
  - Consider training on different aspects as essential;
  - Encourage the completion of additional training;
  - Eventually inciting to know or develop experiences in other existing organizations;
  - Perform experiments with or in new situations, real or theoretical;

Defining the types of entrepreneur, as those who take the risk of becoming entrepreneurs naturally, some authors found signs and characteristics of management in different individuals, which in the long term, lead to large enterprises.

To Filion (1994), managers of small businesses are of different types: **The Woodcutter:** does not like crowds, likes to do things; **Seductive (tempting):** delivered to their own business but with enthusiasm that doesn't persists in time, very sociable, that change the style and interests over time; **Player:** He likes activities and leisure, chooses seasonal or cyclical fields of action without emotional involvement; **Hobbyist:** dedicats all the energy and free time to business, the business is a hobby and he seeks in it auto-achievement; **Converted:** finds its big opportunity and his life revolves around of it, his emotional state is associated to his business and giving it a sacred status; **Missionary:** Has knowledge from product and market and possess an business vision more mature and clearer than the converted;

Entrepreneur makes dreams happen. Transform ideas in real things, that can be made according to the knowledge (Kao, 1989; de Vries, 1997; krizner, 1973).
Conclusions

It is commonly assumed that the personal characteristics (Bechard and Toulouse, 1998; Gorman et al., 1997) and skills of the entrepreneur can be developed through education. According to the Theory of Planned Behavior (Krueger and Carsrud, 1993) people will try to start a business if they believe they have the ability to do so and the activity is socially acceptable.

Then we should be concerned that teaching and education can provide the stimulation of entrepreneurship in school and family.

At School teachers should:
- Encourage creativity and stimulate the development of ideas through notes, drawings or otherwise decided by the student;
- It should identify potential entrepreneurs and stimulate them;
- Teaching the process of innovation and entrepreneurship;
- Promote and give importance to entrepreneurship in economic development;
- Introduce students in the preparation of the business plan;
- Identification of funding sources;
- Talking about small business management, with examples;
- Conduct lectures of strategy for growth and development;

To Filion (1998a, 1998b), it is necessary to provide training in entrepreneurship for students and teaching practices to achieve success: If you are an entrepreneur, it’s because you like to do differently.

So to prepare or Built Entrepreneurs we must:
- Challenge is creativity;
- Encourage students to innovation;
- Debate about the good things that life offers beyond material possessions. Teach them that material goods will be achieved over time;
- Introduce them to some financial subjects;
- Prepare and teach them how to organize a small budget;
- Educate them to start small projects theoretical and real;
- Demonstrate to them and educate them to have expectations of slow growth, with examples of various projects or ventures;
- Ask for their preferences and try to make them take the first step - the creation of new businesses;

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1. Introduction

The socio-economic evolution and the appearance of new social values along the 20th century have brought complexity to organizations, which led them to face permanent challenges and new demands. As a systemic organization, the school was no exception to this.

As an attempt to respond to the challenges of a constantly mutating society, the school was placed in a context of repositioning. There have been reform processes in the educational system that have compromised the traditional, tayloristic orientation (characterized by a highly centralized, bureaucratic and endogenous organization) and that accentuated the uniformity and the standardization of education.

Alves (2003, p.63) notes the visibility of this situation by mentioning that "the era of a school closed upon itself, bureaucratically managed and controlled by the central administrative politics, determined by the small interests of teachers and modelled from the industrial pattern of an assembly line, is doomed do extinction."

By extinguishing, the school has followed the new guidelines, undergoing a transformation in its organizational structure, with the transition from a "school-service-place-of-state" to a "school-educational community" (Formosinho, 1989).

This new concept of school, endowed of some margins of autonomy that share the national education policies with the education administration while adapting to the specificity of the environment, needs to structure and plan activities in the path towards outlining action strategies in a perspective of anticipation of the future. This is where the School’s Educational Project comes in. It appears as an answer to two separate needs: the will to change an undesired situation and the need to effectively and coherently respond to a present or future issue according to determined purposes.
Due to this complementarity, the project can be perceived in a double angle of process and product.

The Educational Project is viewed as a process because it brings out principles capable of mobilising the elements of the organization towards the development of strategies and the construction of spaces of autonomy (Barroso, 1992).

The Educational Project can be perceived as a product when it becomes "a document of long-term strategical planning. As a product, it differs from the documents of operational planning which are destined to materialisation in a short term: the Annual School Plan and the Curricular Project, the Internal School Regulation and the Class Curricular Project(s)" (Carvalho & Diogo 2001, p. 46-47).

For this reason, the plan must be set in a written document that guides the educational actions. There, the strategic options must be registered according to the diagnosis and the values and principles adopted.

However, there are Educational Project (EP) conceptions that relate the term to a set of practices and fields of action and embrace the pedagogical, normative and educational fields.

In the perspective of Costa (1999, p. 10), the Educational Project is perceived as "a pedagogical document created with the help of the educational community that establishes the school’s identity by adapting the legal framework in force to the particular context of the school. It also presents a general organizational model and the goals of the institution; as a management tool, it is a reference point for coherence and unity in the educational action". In other words, the Educational project is formulated by a document that represents the identity of each school (states what it is), presents its general goals (what it wants) and describes the general organizational model (states how it is organised). It contemplates a set of priorities, it defines the principles, it formulates the goals to be achieved and it enunciates the means necessary to achieve them. Therefore, it brings coherence to the actions of the several actors according to the legal framework.

However, the great challenge presented to schools is the transition from a normativist to a negotiation logic.

With the implementation of the Regime of Autonomy, Administration and Management of the Public Establishments of Pre-school and of Basic and Secondary Education - Decree-Law no. 115-A/98, of May 4 - that transition seems to be able to materialise by allowing schools to build areas of autonomy and participation, which are fundamental assumptions of the Educational Project.

Therefore, this study aims to analyse the participation of teachers in the construction of the School’s Educational Project (SEP), and it also intends to contribute to the development of a culture of participation that targets the improvement of teaching and provides schools with the necessary efficiency to achieve the intended goals. Therefore, on the basis of the theme, we now pose a question that represents the issue of our study:

Was there an effective participation of the Primary School teachers in the process of construction of the School’s Educational Project?

The guiding question of this study is, then, followed by an investigation organised from the following purposes:

- To analyse the training/training needs regarding SEP
- To understand the representations/knowledge of teachers on the SEP
- To analyse the participation of teachers in the conception and execution of the SEP
2. Methodology

2.1 Participants

The sample used in this study consists of 194 teachers, mostly female (n=156, 80.4%). Most of the teachers are aged between 34 and 44 years old (n=73, 37.6%), followed by teachers with 45 years old or more (n=62, 32.0%) and teachers with ages between 23 and 33 years old (n=29, 9%). Only 1 teacher (.5%) did not respond (cf. Annex A).

In the same table it is possible to establish the teachers' qualifications, in which the largest number of them hold a Licentiate's degree (n=127, 65.5%) followed by teachers with a Master's degree (n=29, 14.9%), Post-graduate degree (n=27, 13.9%) and Bachelor's degree (n=10, 5.2%).

Most teachers belong to grouping staff (n=110, 56.7%); a higher number of teachers have a length of service from 10 to 20 years (n=90, 46.4%) and have been in the grouping for a period of 5 to 8 years (n=55, 28.4%).

2.2 Materials

This study is based on a survey with four groups of questions. The first group, Identification, focuses on socio-demographic questions (age, gender, education, professional status, length of service as a primary school teacher and time of permanence in the grouping). The second group is constituted by questions related to teachers' training in Educational Projects. Another group explores the teachers' perceptions on Educational Projects. The last group consists in questions concerning the teachers' participation on the construction of the School Educational Project.

This survey has several types of questions, such as multiple-choice questions in dichotomous and Lickert scales, and also three open-ended questions.

2.3 Investigation design

This study can be presented as cross-sectional and descriptive, once it focuses on a single group for representing the population, and the data is gathered in a single moment (Pais-Ribeiro, 1999, 2010).

2.4 Procedures

First of all, there was a data collection on the primary schools through the Educational Charter. After that, the Directors of the seventeen Groupings of the municipality of Porto were contacted in order to obtain authorisation to distribute the survey. The authorization request was hand-delivered in writing, and most of the groupings verbally provided authorisations, except two that sent their consents by e-mail.

Between March and June, the surveys were delivered to the coordinators of the Education Establishment and collected after a fifteen-day period. 320 surveys were delivered and 194 were returned.

In order to process the data, two programs were used: the statistic analysis of data for social and human sciences program SPSS Statistics Vs 20.0 and Microsoft Excel 2010.

Descriptive statistic was performed, considering the frequency analysis of answers, as well as measures of central tendency (average and median), in order to obtain general conclusions about the participants' opinions regarding several aspects that were mentioned in the survey.
3. Results

With respect to the results, aspects such as training, perception and knowledge of teachers on the Educational Project will be analysed, as well as their participation in that Project.

As for the first objective "Assessing the training/training needs in School Educational Projects", we can see in Table 1 that most of the respondents (n=138, 71.1%) did not have training, while only the remaining 56 (28.9%) admit having some training in this area.

In the same table we can also see that, from the 56 teachers who had training, most of them obtained it through training courses (n=35, 62.5%) and the remaining have another type of training (n=10, 17.9%), or a Post-graduate degree (n=9, 16.1%).

We can also establish that, from the 138 teachers who don’t engage in training, most of them claim not to have available training in their area of expertise (n=101, 73.2%), followed by teachers that don’t have a compatible schedule (n=23, 16.7%) and those who are not interested on the subject (n=4, 2.9%).

<table>
<thead>
<tr>
<th>Training</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>56</td>
<td>28.9</td>
</tr>
<tr>
<td>No</td>
<td>138</td>
<td>71.1</td>
</tr>
<tr>
<td>Total</td>
<td>194</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Training</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Session</td>
<td>35</td>
<td>62.5</td>
</tr>
<tr>
<td>Post-graduate degree</td>
<td>9</td>
<td>16.1</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>17.9</td>
</tr>
<tr>
<td>No answer</td>
<td>2</td>
<td>3.6</td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reason for not engaging in training</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>The subject is not interesting</td>
<td>4</td>
<td>2.9</td>
</tr>
<tr>
<td>Lack of training in the field of expertise</td>
<td>101</td>
<td>73.2</td>
</tr>
<tr>
<td>Incompatibility in Schedule</td>
<td>23</td>
<td>16.7</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>2.9</td>
</tr>
<tr>
<td>No answer</td>
<td>6</td>
<td>4.3</td>
</tr>
<tr>
<td>Total</td>
<td>138</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 1 - Results pertaining professional training and respective type of training

In the second objective, “Understanding the representations/knowledge of teachers on the School Educational Project", a set of questions was analysed:

- Perceptions regarding the EP in force;
- Knowledge on aspects related to EP (goals, stages of the construction process and main documents that implement it);
- Identification of aspects that may have interfered in the elaboration and realisation of the SEP.

According to Figure 1, most of the teachers believe that the EP was created because the school needed an identity (n=123, 63.4%), while only 33.00% (n=64) state that it was created due to a legal imperative. 7 (3.60%) teachers provided no answer to the question.
The results regarding the teachers' perceptions on the SEP are presented in Table 2. These consider the frequency of the answers and measures of central tendency as average and median.

According to the analysis, we conclude that, in general, teachers tend to agree with the several questions of the survey. For example, it is clear that a higher proportion partially agrees that the School Educational Project is a pedagogical trend resultant from a legal imperative (n=51, 26.3%), but there is also a large proportion that totally agrees with the statement (n=41, 21.1%). The Average (M=3.10) and Median (Md=3.00) indicate a tendency, although not very accentuated, of agreement on this matter.

There is also greater agreement (I partially agree, n=91, 46.9%; I totally agree, n=86, 44.3%) when considering EP as a document that defines the educational policy of the school; the high values of the average (M=4.28) and median (Md=4.00) support this theory.

As a document that provides useful sense to the participation, the School Educational Project gathers a larger agreement (I Partially Agree, n=102, 52.6%; I Totally Agree, n=50, 25.8%); we can also be led to similar conclusions through the analysis of the average (M=3.90) and median (Md=4.00) results.

Finally, and because this project is based on a document that substantiates the school's autonomy, most of the teachers agree (I Partially Agree, n=92, 47.4%; I Totally Agree, n=33, 17.0%); we can also notice high average (M=3.90) and median (Md=4.00) values.

<table>
<thead>
<tr>
<th>Knowledge on the Educational Project</th>
<th>Totally disagree</th>
<th>Partially disagree</th>
<th>Neither agree nor disagree</th>
<th>Partially agree</th>
<th>Totally agree</th>
<th>No answer</th>
<th>N</th>
<th>M</th>
<th>Md</th>
</tr>
</thead>
<tbody>
<tr>
<td>The School's Educational Project is a pedagogical trend which derives from a legal imperative</td>
<td>49 (25.3%)</td>
<td>16 (8.2%)</td>
<td>36 (18.6%)</td>
<td>51 (26.3%)</td>
<td>41 (21.1%)</td>
<td>1 (0.5%)</td>
<td>193</td>
<td>3.10</td>
<td>3.00</td>
</tr>
<tr>
<td>The School's Educational Project is a document that defines the educational policy of the school</td>
<td>7 (3.6%)</td>
<td>1 (0.5%)</td>
<td>9 (4.6%)</td>
<td>91 (46.9%)</td>
<td>86 (44.3%)</td>
<td>0 (0.0%)</td>
<td>194</td>
<td>4.28</td>
<td>4.00</td>
</tr>
<tr>
<td>The School's Educational Project is a document that provides useful sense to participation</td>
<td>13 (6.7%)</td>
<td>3 (1.5%)</td>
<td>25 (12.9%)</td>
<td>102 (52.6%)</td>
<td>50 (25.8%)</td>
<td>1 (0.5%)</td>
<td>193</td>
<td>3.90</td>
<td>4.00</td>
</tr>
</tbody>
</table>
The School's Educational Project is a document that materialises the school's autonomy.

| 26 (13.4%) | 6 (3.1%) | 35 (18.0%) | 92 (47.4%) | 33 (17.0%) | 2 (1.0%) | 192 | 3.52 | 4.00 |

Table 2 - Results pertaining the perception of teachers on the School's Educational Project

Teachers were also asked to point out two aspects which they considered to hinder the School's Educational Project elaboration. Once more, through a brief analysis of content, response categories were obtained and are properly identified and listed in Annex B.

A large number of teachers point out several aspects related to the difficulties of school system organization (58/194, 29.9%), followed by teachers who mention the excessive bureaucracy (35/194, 18.0%), the lack of human/technical and financial resources (30/194, 15.5%) and the educational community involvement (24/194, 12.4%).

A lower proportion of teachers indicate the absence of time (11/194, 5.7%), the differences between schools of the same school grouping (6/194, 3.1%) and the dimension of the school grouping (5/194, 2.6%).

It is also important to mention that a very large number does not respond (72/194, 37.1%).

With respect to the teachers' knowledge on the Educational Project purpose, we can observe in Figure 2 that a higher number points out as the main aim, To bring the school closer to the educational environment (151/194, 77.8%), followed by To solve problems specific to the school (139/194, 71.6%), To develop innovative actions (85/194, 43.8%), To control and Evaluate the school (30/194, 15.5%), To guide the implementation of school activities (116/194, 59.8%) and To bring autonomy to the school (57/194, 29.4%).

Figure 2 - Main Goals of the School's Educational Project

When questioned about the stages sequence on the construction of a School's Educational Project, a small number of teachers points it out correctly (n=26, 13.4%) and a much larger number does not answer correctly to the question (n=163, 84.0%). Only 5 (2.6%) teachers don’t answer to the question (cf. Figure 3).
Figure 3 - Frequency of right and wrong answers to the question pertaining the stages of construction of an Educational Project

Considering the teachers answers in which concerns to the main documents that contribute to the Educational Project implementation, it is possible to verify from the data in Figure 4 that the main documents referred were the Annual Activities Plan (AAP) (113/194, 58.2%), followed by the Class Curricular Project (CCP) (66/194, 34.0%), Internal School Regulation (ISR) (43/194, 22.2%), and Curricular School Project (CSP) (17/194, 8.8%). 19 of the 194 teachers (9.8%) also indicate other solutions that contribute to the Educational Project implementation.

Figure 4 - Main documents that contribute to the implementation of the Educational Project

Considering at least the reference of two correct documents to a School's Educational Project elaboration, the number of correct and incorrect answers was analysed aiming to evaluate the teachers’ knowledge concerning the essential documents. As we can see in Figure 5, it was determined that most teachers answer correctly to the question (n=112, 57.7%), and a lower number answer incorrectly (n=31, 16.0%). However, it is important to mention that a large number of teachers do not answer to this question (n=51, 26.3%).
Concerning the third goal, “To analyse the teachers participation on the conception and execution of the School’s Educational Project”, the following questions were analysed:

- Teachers participation on the Educational Project (Reasons for Participation and Non-participation);
- Forms of Participation;
- Classification of the importance of their participation on the EP.

Regarding the frequency of the teachers participation on the EP we can observe, according to Table 3, that most of them does not participate on the project (n=145, 74.7%), only 49 (25.3%) do so.

As far as the reasons for their participation are concerned, according to the same table, a high number of teachers consider that their participation might reflect in the school’s dynamic (n=14, 28.6%), followed by a similar number that participate because they believe that it reflects in the pedagogical actions (n=13, 26.5%) and also because they are responding to a request (n=12, 24.5%). Only 2 (4.1%) indicate other reasons and 8 (16.3%) don’t answer to the question.

<table>
<thead>
<tr>
<th>Participation in the creation of the Educational Project</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>49</td>
<td>25.3</td>
</tr>
<tr>
<td>No</td>
<td>145</td>
<td>74.7</td>
</tr>
<tr>
<td>Total</td>
<td>194</td>
<td>100.0</td>
</tr>
<tr>
<td>Reason</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response to a request</td>
<td>12</td>
<td>24.5%</td>
</tr>
<tr>
<td>Considering that the participation in the EP reflects in the school</td>
<td>14</td>
<td>28.6%</td>
</tr>
<tr>
<td>Considering that the EP reflects in the pedagogical action</td>
<td>13</td>
<td>26.5%</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>4.1%</td>
</tr>
<tr>
<td>No answer</td>
<td>8</td>
<td>16.3%</td>
</tr>
</tbody>
</table>
| Total                                                   | 49 | 100.0%

Table 3 - Results pertaining the participation of teachers in the Educational Project and reasons for participating

According to Figure 6, a higher proportion of the 49 teachers who participated in the Educational Project did it by sharing opinions on proposals presented by people responsible for its design (24/49, 49.0%). Those were followed by teachers who participated in the characterization of the school’s situation (14/49, 28.6%), those who were part of the group responsible for the EP (13/49, 26.5%), those who participated in all stages of construction of the Educational Project (9/49, 18.4%), those who cooperated in planning the stages
of implementation (8/49, 16.3%) and finally those who participated in other ways (3/49, 6.10%).

Regarding the reasons that prevented teachers from participating, most refer that it was because they weren’t part of the teaching staff (63/145, 43.4%), followed by those who explained that the Educational Project was the responsibility of a working group (58/145, 40.0%). There were also respondents who claimed that their help was not requested (36/145, 24.8%), that their knowledge on the matter was insufficient (4/145, 2.8%) and also those who considered that the elaboration of the EP was beyond their responsibility (2/145, 1.4%). No respondent argued that he has not participated in the elaboration of the Educational Project because he considered the methodology to be inadequate (cf. Figure 7).

Finally, concerning the importance given by teachers to the participation in the School Educational Project, it is possible to establish that a higher number of teachers find it important (n=125, 64.4%). The average (M=2.75) and median
results (Md=3.00) are also high, considering a scale of 1 to 4 that points to an agreement trend regarding the importance given by teachers to their participation (cf. Table 4).

<table>
<thead>
<tr>
<th>Importance of participating in the School's Educational Project</th>
<th>Not important</th>
<th>Little important</th>
<th>Important</th>
<th>Very important</th>
<th>No answer</th>
<th>N</th>
<th>M</th>
<th>Md</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>28 (14.4%)</td>
<td>125 (64.4%)</td>
<td>36</td>
<td>8 (4.1%)</td>
<td>186</td>
<td>2.75</td>
<td>3.00</td>
<td></td>
</tr>
</tbody>
</table>

Table 4 - Results pertaining the importance of participating in the School’s Educational Project

4. Discussion of the results

The present study aimed to analyse if the primary school teachers participate in the elaboration of the School’s Educational Project and to understand the perceptions they have on that same project.

Therefore, the empirical investigation has focused on answering to a determined set of questions.

We will be discussing the main results that might help to better understand the issues at hand.

Teachers, mostly female, constitute our sample aged between 34 and 44 years old. They all have a Licentiate’s degree and belong to the staff of the school grouping.

One of the specific goals of this study was “To analyse the training/training needs regarding School’s Educational Projects”.

The results indicate that a small number of teachers have received training by engaging in training courses, but a very large portion of teachers has not received training due to the lack of courses.

Due to these results, we’ve decided to research the training plan of the two training centres in Porto, the Training Centre of Western Porto and the Guilhermina Suggia Training Centre. The latest had a training course in 2011 called “Construction, development and evaluation of the Grouping Educational Project, School Curricular Projects and Class Curricular Projects: Education and Training Dynamics”.

However, we’ve been informed by telephone that this was a free course and it had a limited number of participants, which confirms the reason for the non-participation of teachers.

The latest Decree-Law concerning the continuous training of teachers, Decree-Law 18/2011 of February 2nd, “the organization of continuous training courses for teachers should consider the real necessities if each educational environment, namely through training focused on the school and the professional practices” (article 18). This means that the themes of the training courses were not suggested/proposed by teachers according to their needs, which resulted in the lack of courses offered by the training centres.

While working on the 2nd purpose of the study, “To understand the representations/knowledge of teachers on the School’s Educational Project”, we have found that a high number of teachers relates its elaboration to the need for a school’s identity rather than to a legal imperative, which is mentioned by a smaller number.

Most teachers agrees that the Educational Project is a guiding element for the school’s educational policy; it favours the appearance of a culture of participation and it contributes for the construction of new forms of autonomy.

The opinions we’ve gathered strengthen some of the theoretical assumptions stated by authors like Formosinho (1999) and Alves (2003), who view the Educational Project as an organizational instrument that results of the
common will of the educational community. It is a document that provides useful sense to the operational embodiment of the community, that guides the educational actions, that enlightens the reasons and goals of the school activities. It also diagnoses real problems and their backgrounds, it demands a critical and creative participation, it realistically predicts and identifies the necessary resources, and it finds and develops the relevant factors that are responsible for the achievement of the school goals.

Regarding the main purposes of the Educational Project, teachers pointed the involvement with the educational community (e.g. bringing the school closer to the community, developing and guiding innovative actions and activities) and the solving of school issues as the more relevant goals.

The analysis of the knowledge regarding the stages of construction of a School's Educational Project revealed that a very large portion of teachers fails to understand how this project is properly structured. However, it is worth mentioning that some questions can be subject to doubts and confusion, which is the case of divulging and revising the project. A specific analysis of the answers to this question revealed that a reasonable number of teachers change the sequence of both these stages - they don’t know if this stage should be executed before or after the implementation of the Project.

Another aspect we’ve explored concerning the knowledge of teachers on the Educational Project relates to the type of documents that contribute to its implementation. In this framework, a very large number of teachers correctly identified at least two valid documents. However, the most valued were the Annual Activity Planning and the Class Curricular Project.

The reference to the Annual Activity Planning might be due to the fact that this is a planning document which is more familiar to teachers; it is the closest to a determination of the daily educational process.

This document contemplates the purposes, "(...) strategies, means and resources to implement them" (Carvalho & Diogo, 2001, p. 109)

The Class Curricular Project might have been mentioned because this document is an instrument "from which the program, through planning, the educational community, through school, and the teacher, through classes, articulate their intervention milestones". Zabalza (2003, p.47)

The main aspects that teachers feel to be at the origin of the difficulties felt during the elaboration of the Educational Project are the disorganisation of the school system, the excessive amount of bureaucracy and the lack of human, technical and financial resources.

In the third goal of the study, "To analyse the participation of teachers in the conception and building of the School Educational Project", the results revealed that a small number of teachers acknowledge their participation.

Most of those who did recognise having participated in that construction affirmed they did it in order to contribute to the dynamic of the educational community and for considering that their participation bears influence on their pedagogical actions. These statements show the interest of teachers regarding the educational community and its different features.

Teachers have participated in the process by providing opinions on the proposal presented by the people responsible for the design of the Educational Project; they have probably done so in a more creative and constructive fashion, in order to improve the project.

The large quota of teachers who affirm not having participated justifies their attitude with the fact that the EP was the responsibility of a working group.

The new model of Administration and Management caused the appearance of three organs (General Council, Director and Pedagogical Council), represented only by some elected members. One of the competences of the Pedagogical Council is to elaborate the Educational Project proposal, which is then submitted to the General Council by the Director.
Azevedo, Fernandes, Lourenço, Barbosa et al. (2011) argued on the fact that the Educational Project should be fundamentally executed by teams oriented and led by the pedagogical council and the class’ representative; he defended that team to be small in order to better implement the EP, but that doesn’t mean that the remaining teachers stay out of the process. They should contribute when consulted and provide the help that they’re asked, namely by leading interviews, conducting surveys, providing suggestions and participating in meetings where they discuss the documents to be elaborated.

Finally, we’ve tried to find how important teachers find their participation when it comes to creating Educational Projects. We’ve found that they consider that participation important and even very important. That means they are fully aware of the contribute that each teacher can give to the development of the project.

Conclusion

The conclusions hereby presented are based on the analysis of the data collected from our sample and were organized accordingly to the following assumptions: analysing the training or the training needs of teachers on School’s Educational Projects, understanding the teachers’ representations and knowledge on the Educational Project and analysing the teachers’ participation and the importance of their contribute in the Educational Project elaboration.

The following aspects can be pointed out as a final synthesis of the present study:

- Regarding the training of the teachers on Educational Projects, it was concluded that teachers don’t consider the topic as a training necessity;
- In terms of perception, teachers recognise that the Educational Project is elaborated due to the school's need for and identity and there is a strong tendency of agreement with the Educational Project, considering it promotes the solution for the detected difficulties, bringing the school closer to the educational community;
- Even though the teachers correctly mention the names of two documents which implement the Educational Project, they are not aware how the stages of elaboration are organized;
- Regarding participation, a large number of teachers do not participate on the elaboration of the Educational Project, but they emphasize the importance of their collaboration in order to promote the success of the school organization and the opening of the school to the educational community.

Thereby, the direct members of the school’s organization have a minor participation on the Educational Project elaboration, even though they recognise it as a document which fits the framework of mechanisms for identity affirmation and consider it a leading element of the school life.

The Educational Project is considered a guiding instrument for the school life and, as such, demands its own competences which should be developed by teachers in order to answer to the needs of the educational community in which the school is inserted.

That is why, contrarily to teachers’ opinions, we conclude that mandatory training courses are essential. These should be developed in a more practical aspect, where different elaboration processes of an Educational Project can be studied and where activities can be shared in order to bring some suggestions forward and to avoid some of the more frequent difficulties that schools usually face.

Interaction and dialogue spaces should also be created outside the formal contexts, because it is necessary to promote moments for exchanging ideas and
knowledge, and to encourage people to adapt to the colleague’s working strategies.

Therefore, we suggest the execution of more studies in the future. They should explore factors as perception, knowledge and participation in the Educational Projects elaboration by choosing methodological improvements such as the increase of participants and the expansion to different parts of the country. It would also be relevant to assess if aspects such as gender, professional status, length of service, permanence time on the school grouping and training have any influence in the participation on the creation and execution of Educational Projects.

References


In J.A. Costa (Ed). *Proyecto Educativo de Escola de Jorge Adelino da Costa*.


Legislation

Decreto-Lei nº 115-A/98 de 4 de Maio.

Decreto-Lei nº 18 de 2 de Fevereiro.
# Annex A

## Table 1 - Characterization of the teachers’ sample (Gender, Age, Education, Professional status and Length of service)

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>%</th>
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<tbody>
<tr>
<td>Feminine</td>
<td>156</td>
<td>80,4</td>
</tr>
<tr>
<td>Masculine</td>
<td>38</td>
<td>19,6</td>
</tr>
<tr>
<td>Total</td>
<td>194</td>
<td>100,0</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>23-33</td>
<td>58</td>
<td>29,9</td>
</tr>
<tr>
<td>34-44</td>
<td>73</td>
<td>37,6</td>
</tr>
<tr>
<td>45 or older</td>
<td>62</td>
<td>32,0</td>
</tr>
<tr>
<td>No answer</td>
<td>1</td>
<td>0,5</td>
</tr>
<tr>
<td>Total</td>
<td>194</td>
<td>100,0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor’s degree</td>
<td>10</td>
<td>5,2</td>
</tr>
<tr>
<td>Licentiate’s degree</td>
<td>127</td>
<td>65,5</td>
</tr>
<tr>
<td>Post-graduate degree</td>
<td>27</td>
<td>13,9</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>29</td>
<td>14,9</td>
</tr>
<tr>
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<td>1</td>
<td>0,5</td>
</tr>
<tr>
<td>Total</td>
<td>194</td>
<td>100,0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professional Status</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under term contract</td>
<td>55</td>
<td>28,4</td>
</tr>
<tr>
<td>Staff of the Pedagogical Zone</td>
<td>29</td>
<td>14,9</td>
</tr>
<tr>
<td>Staff of the School</td>
<td>110</td>
<td>56,7</td>
</tr>
<tr>
<td>Total</td>
<td>194</td>
<td>100,0</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Length of Service</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 9 years</td>
<td>46&lt;</td>
<td>23,7</td>
</tr>
<tr>
<td>Between 10 and 20 years</td>
<td>90</td>
<td>46,4</td>
</tr>
<tr>
<td>More than 21 years</td>
<td>58</td>
<td>29,9</td>
</tr>
<tr>
<td>Total</td>
<td>194</td>
<td>100,0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time spent working at the School Grouping</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 years</td>
<td>39</td>
<td>20,1</td>
</tr>
<tr>
<td>Between 5 and 8 years</td>
<td>55</td>
<td>28,4</td>
</tr>
<tr>
<td>Between 2 and 4 years</td>
<td>53</td>
<td>27,3</td>
</tr>
<tr>
<td>More than 8 years</td>
<td>46&lt;</td>
<td>23,7</td>
</tr>
<tr>
<td>No answer</td>
<td>1</td>
<td>0,5</td>
</tr>
<tr>
<td>Total</td>
<td>194</td>
<td>100,0</td>
</tr>
</tbody>
</table>
## Annex B

<table>
<thead>
<tr>
<th>Category</th>
<th>Example</th>
<th>No. of Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of the School Grouping</td>
<td>&quot;Bigger school grouping&quot;; &quot;Size of the School Grouping&quot;</td>
<td>5/194 (2.6%)</td>
</tr>
<tr>
<td>Differences between schools and resources</td>
<td>&quot;The differences between student's schools&quot;, &quot;Heterogeneity of the schools in the grouping&quot;</td>
<td>6/194 (3.1%)</td>
</tr>
<tr>
<td>Absence of time</td>
<td>&quot;Absence of time&quot;; &quot;Little time&quot;; &quot;Lack of time&quot;</td>
<td>11/194 (5.7%)</td>
</tr>
<tr>
<td>Much bureaucracy</td>
<td>&quot;Increase of bureaucracy&quot;; &quot;Too much bureaucracy&quot;; &quot;Excess of paperwork&quot;; &quot;Increase of projects, activities and roles&quot;; &quot;Many meetings&quot;; &quot;high number of goals to achieve&quot;</td>
<td>35/194 (18.0%)</td>
</tr>
<tr>
<td>Difficulties in the system's organization</td>
<td>&quot;Lack of consensus/union&quot;; &quot;Difficulties in the system's organization&quot;; &quot;Real absence of verticality&quot;; &quot;Problems with the creation of the document&quot;; &quot;Academic failure/Indiscipline&quot;; &quot;Little information/Training&quot;; &quot;Inadequacy of the project regarding the environment&quot;; &quot;Different timetables in the same grades&quot;</td>
<td>58/194 (29.9%)</td>
</tr>
<tr>
<td>Involvement of the Educational Community</td>
<td>&quot;Lack of Involvement of the Educational Community&quot;; &quot;Lack of interest from the Guardians&quot;; &quot;Lack of interest from parents&quot;; &quot;Little will to cooperate&quot;; &quot;Conflictive local environment&quot;</td>
<td>24/194 (12.4%)</td>
</tr>
<tr>
<td>Lack of physical/human/financial resources</td>
<td>&quot;Lack of Human Resources&quot;; &quot;Lack of financial resources&quot;</td>
<td>30/194 (15.5%)</td>
</tr>
<tr>
<td>No answer</td>
<td>-</td>
<td>72/194 (37.1%)</td>
</tr>
</tbody>
</table>

Table 1 -- Difficulties in the Implementation of the School’s Educational Project mentioned by Teachers
18. ENTREPRENEURSHIP EDUCATION IN PORTUGAL – CONSIDERATIONS ON THE TOPIC AND ITS DEVELOPMENT ENVIRONMENT

Helena SARAIVA
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Teresa PAIVA
Polytechnic Institute of Guarda, Portugal

Introducing

The role of entrepreneurship in terms of economic development has been renowned for various theorists through time, among them Schumpeter (1934), Leibenstein (1968), Kirzner (1997), Baumol (2002) and Acs et al. (2004).

Entrepreneurship’s definition often figures by referring to the attitudes towards the surrounding environment and the ability to respond to such environment, in order to build solutions which happen to add value into society. For the European Union (2012), entrepreneurship regards the individual ability to turn ideas into actions, and such ability requires creativity, innovation and risk taking, as well as entails the capability to plan and manage projects with the purpose of achieving aims and targets. The same source considers that this bears daily activities, either personally or socially, makes workers more aware of the context of their own work and most apt to seize opportunities, by providing a basis to entrepreneurs to establish a social or commercial activity.

Converging with this direction Poikkijoki and Heinonen (2006) state that entrepreneurial behavior has been widespread, and this is related with the appeal to larger and better entrepreneurial competencies in order to face mounting challenges and future’s uncertainty.

According to those authors, the attributes related to entrepreneurial activity, aiming the creation of viable platforms for the development of societies, consist on high readiness for change, self-confidence and creativity, as well as an innovative approach to address problems.

Literature seems to suggest that entrepreneurship behaviour is limited and/or influenced by several factors, being one of them the national cultural characteristics of the country in which entrepreneurs are in and born and raised (Tan, 2002). Busenitz and Lau (1996), cit. in George and Zahra (2002), state that studies of transcultural research try to understand how culture may influence entrepreneurial activities. Another aspect highlighted in literature is the apparent tendency in recent research, to study and try to understand how entrepreneurs think and make decisions due to cultural aspects (George and Zahra, 2002).

Most researches related to entrepreneurship, entrepreneurs’ characteristics and national culture base their models upon Hofstede cultural dimensions (Hayton et al., 2002). The five cultural dimensions considered by Hofstede (2001) consist on: power distance, individualism and collectivism, masculinity
and femininity, uncertainty dislike, and orientation towards long term or short term. Hofstede (2001) found that Portuguese culture is most expressively characterized by the dimensions of power distance and uncertainty dislike, and especially by the last one.

Generally, research made on the subject shows that entrepreneurial activity level is favored in cultures with low power distance and low uncertainty dislike, high individualism and masculinity (Hayton et al., 2002). By these authors, high uncertainty dislike and high power distance, precisely the ones identified by Hofstede as the main cultural dimensions in our country, are inhibitor of entrepreneurial activities, whereas high individualism and masculinity are stimulus. Those cultures which value and enhance self-realization, autonomy and material conquest are, in a general way, the ones that achieve higher rates in businesses establishment.

According to Monteiro da Silva et al. (2009), Hofstede relates high power distance to power’s centralization which inhibits entrepreneurship. Whereas, low power distance is associated to decentralization, being this a stimulus to entrepreneurship. The same way, high uncertainty dislike enhances restrictive roles and extreme formal procedures, which are also negative issues when relating to entrepreneurial initiative. On the other hand, a society that shows low uncertainty dislike becomes more capable to understand and seize opportunities, and this is fundamental to increase rates of entrepreneurship. As for masculinity, and since this is a competitive feature, of endurance and struggle for existence, it is positively associated with a higher level of entrepreneurship, in opposition to femininity.

The notion of innovation has been constantly linked to different aspects of entrepreneurship - in most developed economies, the long-term economic growth relies increasingly on enterprise creation and on the fact that they generate innovation in terms of products, services and processes. The process of innovation is closely linked with the concept of businesses, because their creation is, itself, an innovation (Drucker, 1985). As for innovation intensity, it differs depending on the company which originates it, since organisations’ motivation for producing innovations is to create value, thereby increasing their competitiveness and promoting their survival (Mulet, 2011). In this sense initiatives not exclusively based on innovation, but also in replication, will also take relevance (Kürzner, 1997).

Thus it is important to establish that relationship seems to exist between the activities of established businesses and the creation of new business initiatives, linking these issues with the national growth of countries - Reynolds et al. (1999).

Therefore the establishment of businesses takes great relevance and importance. New companies bear the mechanisms of increased competitiveness and economic growth, and it is for this reason that the European Union has boosted support to general government for setting up innovative businesses and activities, being the primary purpose of the Europe’s 2020 Strategy.

One of the ways in which public authorities have been working to achieve this goal is through entrepreneurship education practice extended to most of the EU countries.

The aim of this paper is just to undertake an analysis on the evolution of the formative experiences on entrepreneurship, within the European Union and to compare it with the developments of the same in Portugal.

To answer this investigation question - how has entrepreneurship education evolved, especially in countries of the European Union, in general, and in Portugal, in particular, during the past few years – we have conducted an analysis of the literature on scientific papers and official documentation, coming either from the European Union or from national institutions.

The methodology used in the present paper was bibliographical and documental analysis, with recourse to several databases, including the Scientific
Open Access Repository of Portugal - Repositório Científico de Acesso Aberto de Portugal (RCAAP), as well as the Eurydice database, and the Global Entrepreneurship Monitor (GEM) database, in order to identify the main educational practices generally pursued in the territories identified and their respective outcomes.

This paper is organized as follows: initially it is mainly addressed the point of education for entrepreneurship and its’ respective framework and guidelines, then it is carried out an overview on the developments in this kind of teaching within the European Union and then comes the analysis on the evolution of this kind of education in Portugal. Lastly the main outcomes are identified, subsequently being set out the conclusions and suggestions for further work on the subject.

1. Entrepreneurship education

According to Levie and Autio (2008), the key issue from the standpoint of entrepreneurship research is not who are entrepreneurs, but rather how they develop their action, under which circumstances and with what effects. In this sense education and entrepreneurship training has been one of the most studied and used ways to leverage business activity. Such education and training activities, conducted specifically for entrepreneurialism, have generally the purpose of increasing the supply of entrepreneurship across different mechanisms which normally are linked to: the transmission of instrumental skills necessary to start and grow a new business (Honig 2004); as well as by strengthening cognitive abilities to handle the complexity involved in recognizing and assessing business opportunities (Detienne and Chandler, 2004); and also by the cultural effects on people, such as attitudes and behavioral dispositions (Peterman and Kennedy, 2003).

Regarding the models that have been followed to compose the entrepreneurship notion, its teaching and their outcomes, one of the most widespread and accepted is that of Poikkiöki & Heinonen (2006), which has been used by the European agency for education, audiovisual and culture (Education, Audiovisual and Culture Executive Agency - EACEA). This model employs three perspectives as the anchors than an entrepreneurial activity should assume: attitudes, knowledge and ability to act.

Although some authors (Béchard and Grégoire, 2005), had highlighted the fact that even with education being one of the issues most studied and discussed in entrepreneurial literature, its effects in terms of entrepreneurial activity of the populations would not have been still clearly stated; yet, there are another authors who assert precisely the opposite (Levie and Autio, 2008): the real impact of training and teaching entrepreneurship is verified either by the influence exerted in the population of a country, in terms of the ability to recognize and seize economic opportunities business, or through the fact that this kind of training infuse on individuals the skills and technical expertise required to support the onset of companies.

Other authors (Audrechtsch et al., 2007), further consider there is a general consensus on the fact that entrepreneurship consists on a liable phenomenon, at the national and regional level, to be influenced by political decision makers, with the attention and knowledge bestowed by those, positively associated with the allocation of efforts devoted to increase entrepreneurship. In this sense, Leibenstein (1968), asserts that should be taken into account at this level, not only barriers to entrepreneurial activity, but also that the policies should be focused in strengthening the market efficiency and promoting an environment able to motivate entrepreneurs.

Therefore, it will be crucial, in our opinion, in addition to the creation of the circumstances required to encourage entrepreneurship, also to establish a culture to support entrepreneurship activities, namely, boosting the
development of individual capabilities to recognize opportunities by passing the
information needed to identify these opportunities and the cognitive properties
necessary to cherish them. According to Shane and Venkataraman (2000), the
input of information required must be impounded based on a background on the
user’s requirements in certain areas; as for the cognitive properties they should
match to the individual ability to process the information taken from social
interaction taking place in the market.

Whether the entrepreneur shall be able, or not able, to perceive the
opportunities at a given moment or situation, it will depend on its own ability to
understand, analyze and realize the responses delivered by the market.
Processing these mechanisms is critical even before any response from the
market, leading to facilitate and guide the actions, by providing insight into how
to take advantage of a situation, resource or unfulfilled need. Thereby,
entrepreneurship education should leverage the development of cognitive
capacities requested to meet market opportunities. All training and education for
this issue shall provide to individuals the contact with histories and cases of
discovery and exploration of entrepreneurial opportunities, by giving examples
to the students that they can use as a reference when they themselves do might
encounter unsatisfied needs or non appreciated resources.

2. Entrepreneurship education in the European Union

The model presently accepted and implemented in the European Union to
compose the notion of education in entrepreneurship is based on that proposed
by Heinonen and Poikkipöldi (2006), and takes as its main objective to give
students the attitudes, knowledge and skills for acting in an entrepreneurial way,
taking the various dimensions of entrepreneurship education from being
unfolded into several categories, that provide the framework of different
learning outcomes achieved by EU countries, namely:

Attitudes:

Category 1 - self-awareness and self-confidence - are the basic attitudes
required for every other aspect concerning to entrepreneurship - involves the
discovery and trust in individual skills which enable subsequently turn creative
ideas into actions. In many countries such attitudes are pursued as goals of
general education.

Category 2 - Taking the initiative, risk-taking, critical thinking, creativity
and problem solving, are also key aspects to an entrepreneurial attitude.

Knowledge:

Category 1 - The knowledge of career opportunities and labor market are
learning outcomes which are not exclusively related to entrepreneurship, being
also part of the overall preparation of the students at preparing their future
careers; this kind of awareness is still required to realize the meaning of being
an entrepreneur, since they involve knowledge of the nature of work and the
different types of labor, contributing such knowledge for the assessment of
opportunities and threats.

Category 2 - Economic and financial literacy, including the knowledge of
concepts and processes relevant to entrepreneurship.

Category 3 - knowledge about business organization and processes - this is
regarded as specific to the environment in which entrepreneurship is developed.

Skills:

Category 1 - Communicating, presenting and planning, as well as the
ability to work in group - all regarded as transversal competencies for
entrepreneurs.

Category 2 - Exploring entrepreneurship opportunities - taking into
account the different stages of setting up a business - including design and
implementation of a business plan.
These dimensions and categories have been used in entrepreneurship education in the EU countries, in full or in part, either at primary education or secondary level, or both simultaneously. In the reference years 2011/12, in terms of primary education, about half of the European countries defines entrepreneurship learning objectives related to the curriculum level, while in terms of secondary education, increases the number of countries who do this for all the levels for upper figures. It is also verified that, at the level of primary education, learning objectives find themselves embedded in compulsory subjects, while on the secondary education occurs precisely the opposite – i.e., on this level of education entrepreneurship issues are typically integrated in optional subjects.

Based on the Eurydice survey conducted in 2011 under the theme Education for Entrepreneurship, covering national strategies, initiatives and ongoing reforms relating to the current situation of entrepreneurship education – in which thirty-one European countries have had part - it appears that the vast majority of them includes the teaching for entrepreneurship in their systems and strategies. This seems to reflect the recognition of the importance of entrepreneurship education in Europe, where about half of the countries developed objectives by linking them to promote this kind of education embedded in broader strategies - education throughout life, education and youth, as well as growth - while other countries, including northern Europe, have developed specific strategies, as seen in Figure 1.

In accordance with same source, two thirds of the European countries explicitly recognize entrepreneurialism in the basis documentation of the primary system, whereas in the secondary system, the theme is considered in educational documents in virtually all countries. Figure 2 shows the launch dates or startup national strategies for entrepreneurship education.
Several European countries had set specific learning outcomes resulting from the process of teaching for entrepreneurship, and these results, in general, undertake different aspects of all three dimensions: attitudes, knowledge and skills.

On starting or initial level, half of all countries had set results basically related to attitudes, but also with horizontal skills; at this level no country defines outcomes related to skills in exploiting opportunities of entrepreneurialism.

Regarding to secondary education level, practically the totality of the countries in European Union established outcomes for entrepreneurship education; many countries made it on considering the three dimensions and most of them, at least two dimensions; however no country had setted results only for operating entrepreneurship opportunities. This seems to indicate that the other dimensions are needed to support this - especially in countries where this category was considered. The dimensions concerning understanding of business activity are also introduced at the same level of education.

3. Entrepreneurship education in Portugal

National Strategy for Entrepreneurship Education designed as Plano Nacional de Educação para o Empreendedorismo (PNEE) was launched in Portugal by 2006 and developed between 2006 and 2009, being implemented until 2010. This initiative has boosted cultural, organizational and personal adaptations (Teixeira, 2012).

PNEE aimed the development at secondary education level, projects to enhance entrepreneurship attitudes. The program wasn’t implemented in all the schools, but it was possible to do it since in the secondary curricula there were subjects such as “Project Development” that allowed to students and teachers the opportunity to develop their projects. Several changes attained PNEE during its existence, most of them caused by the process that enabled autonomy in secondary level schools.

PNEE was implemented by the schools’ will to pursue entrepreneurial activities, yet mobilizing teachers to commit to this project was a difficult task and consequently motivating students to do it was also very difficult (Teixeira, 2010).

This shows the importance of the teachers’ role, as a mediator of the learning process, as referred by Delors et al. (1996) and by The Commission of the European Union (2007), being fundamental to the development of the student’s competences and abilities. Motivating students is a difficult task, especially given the dominant cultural characteristics in the country (Hofstede, 2001). In addition to these conditions, other limitations, such as that, in fact, many times school is regarded as a tool for transmitting information that competes directly with other tools considered most appealing by the students, namely television and internet (Teixeira, 2010). Teacher training in entrepreneurship appears to be a better way to deploy entrepreneurship education, but it becomes necessary to pave the way to involve teachers in the topic of entrepreneurship.
So, the overall picture in the country is that there are a number of schools that developed entrepreneurship education (EACEA, 2012). The schools referred mainly from the secondary level on its final stages.

In complement to these, some municipalities developed local strategies to promote entrepreneurship with youngsters – in this case education levels involved were primary as well as secondary education, depending upon the initiatives implemented, such as: campaigns in schools, contests, workshops, business advisers, etc

By official documentation, entrepreneurship education is explicitly recognized as cross-curricular objective at all school levels - however, being not compulsory as such, it is only really considered if school's board decides to insert it in as part of the subject Civil Training.

As for learning outcomes, they can be found in general guidelines and recommendations' documents for practice, applied in the context of the national curricula. They can include the development of attitudes such as self-awareness, self-confidence, initiative and risk-taking, creativity, critical thinking and problem-solving as well as transversal entrepreneurial skills like communication and team-work, and even, some learning outcomes are linked to economic and financial literacy

Recently, has been proposed a plan in which entrepreneurship education is also generically considered, being implemented since year 2011/12, named as Programa Estratégico para o Empreendedorismo e a Inovação + E, + I, which has been launched in 2011. For this is not known, until now, learning outcomes resulting from entrepreneurship education.

The main results of GEM (Global Entrepreneurship Monitor) study in 2010, shown that the basic and secondary levels of education don't promote enough stimuli on students' creativity, self-sufficiency and personal initiative and doesn’t fit on main economic principle neither gives enough attention to entrepreneurship subject. This study also states that the interest on entrepreneurship education has decreased between 2010 and 2007.

It seems that, nowadays, this situation is changing, since, by our opinion, several implemented projects brought awareness on entrepreneurship's items at these education levels, despite the issue of lack of structure on teaching methods.

In contrast with this, GEM (2010), evidences a noticeable quality on business and management education, as a way to ensure a solid training to create and develop new business, at the higher education level. It was stated that differences at this level, between 2007 and 2010, were an important improvement to maintain.

A big similitude was found between the national reality and the general UE countries, at the higher education level, but at the secondary level, namely on professional education, Portugal still doesn’t show improvements on students’ training in the startup and development of new business.

Conclusions

In due to the exposed, we can state that it is essential to establish a base structure for entrepreneurship education, especially at the primary and secondary levels, enabling the required support, in order to achieve the required attitudes to become an entrepreneur. We found that without the reset on the actual system it will be very difficult or even impossible the settlement of an entrepreneurial culture in Portugal.

This situation may be caused by the natural cultural characteristics of the Portuguese, since the characteristic on high power distance. This cultural dimension of Hofstede (2001) is related to the level of equality between people within a society and also to the level of acceptance by the less favored individuals, with relation to this uneven distribution of power. This dimension
might show us that the Portuguese think that, maybe, entrepreneurship attitude is not for everyone and should be a behavior of only a few individuals.

The uncertainty dislike, found by Hofstede (2001) in the Portuguese culture is also an inhibitor of entrepreneurship and this characteristic may explain why the level of business creation is low, even when business and management’s higher education results are improving.

So, at this point, given the present scenario, we must highlight that the Portuguese challenge is to overcome a cultural inhibition to entrepreneurship, making an investment in entrepreneurship’s education as a tool to implement the urgent changes in attitude and behaviour of the individuals. The strategy to pursue must be designed in a long term perspective, but it has to allow, in the near future, the continuous creation of entrepreneurial skills and abilities, carried out in a solid and underpinned way.

Regarding this, the only institution that can meet the referred aim is educational system, through its different levels, and to do so, teachers will need to turn the main actors, playing a critical role. To achieve teacher’s motivation in entrepreneurship, and through them, achieving students’ motivation, is still essential.

It will be necessary to encourage change in students’ behaviours, in order to accomplish a society with higher entrepreneurial culture. The interdependence between all these actors (culture, community, educators, schools, teachers and students) is crucial and can be represented as shown in figure 3.

![Figure 3 - Promoting an entrepreneurial culture](image)

Source: adapted from Teixeira (2010).

It’s also important to enhance that it’s necessary to setup a proper environment to promote entrepreneurship education. These environmental conditions should, at first, be endorsed by the Ministry of Education, who has to develop an organizational, and curricular plan, and define the main leaders in the educational structure, without forgetting that the main goal of entrepreneurship is cultural attitude and behaviour.

So, based on all previous considerations, in our opinion, it should be settled a clear guideline to enhance the two first categories related to attitudes as defined by Heinonen and Poikki (2006); self-awareness and self-confidence and taking the initiative, risk-taking, critical thinking, creativity and problem solving. This in order to overcome Portuguese traditional cultural condition’s stated by Hofstede (2001). Considering that cultural conditions are a subject that should be addressed as soon as possible in individuals’ life time, this should take place in the first educational level, i.e. in primary education. Another cultural condition stated by Hofstede (2001) is individualism – these one being positively related with entrepreneurial activities - however, one of the aspects highlighted by Heinonen and Poikki (2006) is the ability to work in group. We found this last item very important since it should be cherished the condition which allows youngsters, from the beginning of their education, to act and perform embedded in networks. Being this, by the exposed, very important to act that way in the first level of educational system, it should also be deployed in primary education.
For all these reasons, the teachers’ role will be crucial, as well as their preparation and background to act in an entrepreneurial way of teaching; as a “learning facilitator” (European Commission, 2011), and as an agent of change, and being able to network making connections to a wide range of stakeholders.

Cultural values and attitudes linked to entrepreneurship behavior should be the focus to the settlement of new education strategy upon entrepreneurship. To empower Portuguese individuals since young ages and to develop competences and abilities on creativity, assessing and risk-taking, and consequently, knowing how to deal with failure or success, are very important cultural tools to a future entrepreneur.

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1. Introduction

In 2007, the midway point of a 15-year global effort to achieve the Education for All and Millennium Development Goals for Education, the World Economic Forum Global Education Initiative (GEI) Steering Board recognized the need for new and innovative models in education with entrepreneurship and entrepreneurial skills as a catalyst for change (Wong, Cox, Dhowtalut, 2011, p.4).

In a recent article, Jenner (2013) brings our attention to the fact that the next generations will have to be prepared for an initial period on their employment that will not match their academic qualifications that may be followed by a period of unemployment, with all repercussions inherent to that situation. It is in this context that the author insists on the need of training in entrepreneurship learning methods and the urgency in modernizing professional internships. As a result, the emphasis is placed on the entrepreneurship skills and in the development of values connected to citizenship through students’ educational training, recurring to practical classes that focus specifically on entrepreneurship and social innovation, in addition to the formal curriculum on the subjects of mathematics, sciences, history and literature.

These ideas of Jenner are based on studies conducted in Norway and Sweden, where students that went through a participation in education for entrepreneurship revealed higher levels of self-confidence than others in control groups, as well as being more successful in terms of employment and salary.

The author still defends that the best options to perform such implementations in education, especially in times of economic crises, must be built through public-private partnerships and by channeling governmental resources (specifically from the educational ministry), from the private sector, and even from introducing the expertise from the practical and the local networks with the aim of training teachers. She justifies these proposals by ascertaining the existence of good practices outside the scholar context that, as a consequence, will help young people on their transition from their academic life to their professional life. Jenner also accentuates the long-term importance of the positive impact of education for entrepreneurship with the involvement of the real world through the community. Basing herself on the European Round Table of Industrialists report, Attitudes to Work, she refers that an approach of more entrepreneurship in relation to work, where people have the opportunity to show their talents, would benefit the private and public sector and significantly contribute to economic prosperity.
These considerations over the advantages of training/supervising in entrepreneurship have dominated the reflections and public debate around the current social issues. As if being dragged, education appears as a possible and consistent path to implement these new competences, meaning that a new challenge is raised, particularly when it comes to teachers training, whether it’s beginning or ongoing.

The 20th century revealed itself as fruitful in innovating education. If the 19th century would introduce all the novelty of progressive education and progressive schools, it is possible to affirm that it was in the 20th century that took place implementing those novelties in the field. The countless theories, methodologies, working strategies in and out of the classroom, activities shared between teachers and students, reflections on planning, teaching and learning, students’ academic performance, the equal opportunities to education and educational success, the inclusion in school of students with either differences (gender, ethnic) or disabilities (motor, visual, hearing, among others), to the exhaustive monitoring of the work developed by teachers and students and individual or small-group counselling or studying support classes to help pupils in what concerns their level of learning are proof of that.

These novelties were always followed by new, specific terminology that, in many cases, seemed to be sufficient on their own, whether in their verbal, oral or written usage by managers, teachers and guardians, to let out the motto for change and news in classroom work. Formative evaluation, continuous evaluation, interdisciplinarity, analysis of needs, problem solving, project work, student autonomy, cooperative work, all of these became common words in the teacher’s lexicon and of all directly or indirectly involved in teaching and learning, arousing frequently doubts about their true comprehension, conception and actual fulfilling. Using new vocabulary does not imply an effective real change on the teacher’s working context and on the teaching and learning methods.

After all, it looks like we’re standing before a new vocabulary in education, entrepreneurship. As it always seems to happen, school, as a reflex of society, as a microcosm of it, as a space of preparation and training to living in society, is the chosen place for its establishment. However, it’s hard to make said school the engine of society!

2. The concept of entrepreneurship

The concept of entrepreneurship seems to enter school as a result of the economic problems experienced by current societies, that aren’t foreign to the profound technological, social and work relations changes that have been increasing particularly since the beginning of the new millennium. A new world with new vocabulary and new challenges!

This way, at a first glance, the concept of entrepreneurship, ransomed from the business world, may seem to be a synonym of cooperation, creativity, originality, autonomy, communication, interculturality, problem solving, clear definition of goals, project designing, attaining and evaluation, among others. At the same time, it also seems to point towards indicators of personal and leadership development, as if valuing a well-succeeded individualist.

Following this logic, for the school, more specifically to its teaching staff, it cannot be affirmed that this is new, especially if you take into consideration the appreciation that has been done by the same school of their students' individual characteristics, their competitiveness, of its own teaching and the quantitative learning results.

It is important to reflect on this point. To teach entrepreneurship and include education on it, whether in autonomous or transversal curricula, it is necessary that all teachers comprehend the meaning and implications of the concept. In other words, one can only teach what they know and, if they haven’t
been trained in those skills, they will have a lot of difficulty passing or practising them with their students, unless they use the word in situations that don’t correspond to learning according to the meanings of it.

3. Training and supervising teachers

In the last few decades, teachers’ own training has been marked by a remoteness from the teaching institutions when it comes to the context of the training in place. This can’t be generalized but teachers’ training, especially at university level, with the internship for 3rd cycle and secondary school, has moved trainees away from a real involvement with their work in the school, with their already professional pairs and from their responsibilities towards a class and the ensuing contact with their family, environment and community. Their practical training is done in the context of a classroom of a professional teacher, assignee of the respective class, registering the trainees’ intervention by learning sequences defined over time, sometimes in different schools. As if trainees represented a group of students positioned between the cooperating teachers and students of the class!

This initial training for aspiring teachers, through the successful conclusion of a master’s degree, approved in teaching practice and after undertaking the public defence of a report on their supervised teaching practice, raises various questions about the real learning opportunities of the entrepreneurship skills that are currently advocated. In other words, it appears that it’s investing mostly on a theoretical subject knowledge, as if prolonging the contents of the undergraduate subject area, rather than a reflexive practice, adequate to the contexts and the intervenients.

On the other hand, it raises another question that appears to be even more important. Teachers’ initial training is supervised by other teachers on whose formation this concept wasn’t part of, where those skills weren’t practised, even in their continuing education, in other words, it is being asking for someone to train skills they haven’t acquired. Maybe because of it, it is equally called for a bigger relationship with the world of work, with the community and its elements that, in other working contexts, dominate them.

However, isn’t it utopian and extremely unreal to appeal for this when school itself has as many difficulties to dialogue within itself, between its various intervenients?

But if, by guiding principles, the references to entrepreneurship accentuate the innovating character, the educating agents, particularly teachers and supervisors, also have to adhere to and try acquiring new skills.

Entrepreneurship is about growth, creativity and innovation. Innovative entrepreneurs come in all shapes and forms and their impact is not limited to start-ups – they also innovate in the public, private, academic and non-profit sectors. Entrepreneurship refers to an individual’s ability to turn ideas into action and is therefore a key competence for all, helping young people to be more creative and self-confident in whatever they undertake (EC, 2008). As H.M. Queen Rania Al Abdullah of the Hashemite Kingdom of Jordan stated at the GEI private meeting in Davos in 2007, society faces a strong need to encourage people to practice believing the unbelievable, using imagination and courage, and tapping into the inner entrepreneur (Executive Summary, Final Report on the Entrepreneurship Education Workstream, p.5).

4. "Rehearsal" of entrepreunership

Even by placing all the previous doubts in what refers to the context of Portuguese schooling, it is believed that a lot of teachers have guided their professional life through improvement, enrichment and professional development patterns with clear reflections on their growth as people.
In that sense, we can include them, quoting Silva (2007 p.109), in the stages of new roles in school (Skies, 1985), experimenting (Huberman, 1990), professional competence (Leithwood, 1992), to which stages of teaching life they refer to.

To them, entrepreneurship will present itself as another challenge, an aim to achieve, a path ahead, a step to overcome in the professional climb, having always the preparation of the student to an active life in society as a goal.

From our personal experience, we applied a common method of evaluating students of initial teacher training that has been applied for three years: a group review of a book or an article about education.

The reason behind this choice owes to various factors of which the following stand out: a) the need to prepare students, future teachers, to teaching contexts where they will have to valour new competences; b) try different working and evaluation processes with those new competences; c) to introduce new practical work with higher education students; d) rehearse new challenges.

Subsequently, how this method of evaluating has been developed will be presented.

Course:
- Compulsory first semester subject.
- One weekly three-hour session (18:00-21:00)
- One individual or small-group counselling session (21:00-22:00).

Class characteristics:
- Students of teacher training, in the Faculty of Social Sciences and Humanities of the New University of Lisbon, master’s course, first year (only in the university because internships at schools are done on the second year).
- Students from all teaching courses: Languages and Literatures (Portuguese, French, English, German, Spanish, Latin), Philosophy, Geography, History, Musicology.
- Undergraduate courses done in different universities in Portugal.
- Admission by application.
- Ages between 22 and 55.
- The total number of students varies, usually between 60 and 80.
- Very different life paths, occasionally in areas quite different from teaching.
- Members with or without experience of teaching at schools.

Goals:
- Preparing students for dialogue and interaction in different curricular areas.
- Encouraging working in small groups.
- Analysing a book or article about education.
- Bringing students to comprehend that there are different interpretations of the same work.
- Creating discussion and debate environments from the analysis of a work.
- Developing the ability of synthesis.
- Developing the ability to accept different opinions.
- Elaborating a common text, reflection from reading and discussions that occurred in a group.
- Writing an evaluation report of the task developed by the group.
- Developing responsibility on the task to be done.

Group organisation:
The course unit’s program (including evaluation methods) is only analysed with the students after the teacher’s introduction, followed by the students’ introduction in pairs (the first working session). The choice of this strategy is
due to the fact that it aims to create, from the start, a communicational environment between the class elements. As a consequence, no student will introduce themselves, but instead their classmate, after a conversation that will not exceed 15 minutes.

It also serves as a "breaking the ice" moment, one of informal talk, a first meeting, a frequent first step to forming working groups.

After analysing the program and clarifying the evaluation methods, particularly on what concerns the review, the students have two weeks to organize into working groups (max. 5 members), to perform the review and choose the work or article to analyse.

After the previous stages have been cleared, each group will register, in a sheet prepared by the teacher, the names of the group members and the work or article to analyse.

Teacher counselling:
During the time destined for tutoring sessions, the teacher will work with the different groups, clearing doubts. The teacher will also elaborate a sign-up sheet in tutoring sessions, so that students can always be in groups to place their questions and temporarily distribute the group attending so there is a complete clarification from all elements.

Besides these sessions, the teacher even makes available two hours per week for counselling with attendance and doubt clearing through the Moodle e-platform.

The oral presentation of each task to the class is only done after a written comment by the teacher (with established rules), sent by a group representative through email and returned by the teacher to the group.

Difficulties encountered:
• Reluctance, from various students, in working as a group and with colleagues from other subject areas.
• Resistance to their own work of common reviewing, because it forces dialogue, discussing different readings/points of view, the joint elaboration of a single text and a joint evaluating reflection of the work done by the group.
• A never-pacific acceptance of a single final grade for the entire group.

Students’ opinion:
• Generally, students consider this experience as positive.
• Some reference it as a difficult working strategy because it forces them to listen to others, thinking about what they think, finding common points, solving situations, producing a final single text and proceed to a self-evaluation and that of others.
• For all of them, the ten minutes that each group has to present their analysed work to the class are considered very gratifying, taking into consideration the approached subject, it’s relevance and the reasons to suggest (or not) it’s reading or consultation to the colleagues.

Balance of the work performed:
It is not easy to change ingrained working processes that also facilitate developing said work, especially when investigation work is added to the current teaching practice, both being quite demanding. On the other hand, the importance that higher education institutes pay to writing often push aside the challenges proposed to students’ teaching and learning.

It is necessary to analyse necessities, outline action plans, adhere to change, experiment, evaluate and begin available to learn with the various difficulties that will be placed to innovate working methods. It is necessary to be demanding, organised, determined and to believe that is indispensable to change. The
temptation for following routine, as it facilitates, is a powerful obstacle to overcome, especially when, as in our case, you add up almost four decades of continuous professional work.

5. Suggestions for supervisors’ training

The already quoted Final Report on the Entrepreneurship Education Workstream, on page six, presents the following systemic scheme.

![Figure 1 - The entrepreneurial ecosystem](image)

However, its’ analysis may lead to an attitude of discouragement when facing the complexity and the need to articulate the different elements involved, sometimes even pushing teachers away from involving with justifications connected to the out-of-school world, hard to fulfil. There is a sort of tendency to blame the “system” and use it as a model exterior to the teacher.

The same document is resourceful in methodological indications about good practices in terms of entrepreneurship. Goals, commitment, motivation, interest for campaigns in relation with the theme, using life stories of success, personal reports of those experiences, discussion and support networks, partnerships in and out of university, integrating entrepreneurship in a formal curriculum, developing online global platforms, creating local initiatives, exchanging experiences - those are some of the suggestions provided in official documents.

Hereby included, Annex 1 of the document The Budapest Agenda (2011), entitled Enabling Teachers for Entrepreneurship Education (pp. 41-44), lists indicators to develop whether in initial training or in continuous teachers’ training.

However, it is not unacceptable to introduce some suggestions that might be considered motivating and possible achievable. They can be a first step to reach other levels.

Thus, and in what refers to supervisors, the following six suggestions are presented:

1. Researching and reading documents produced in the field of entrepreneurship and also related with teachers’ training, widely published via the internet.

   Researching and reading these documents will allow the supervisor to acquire knowledge about the subject as well as allowing them to know what they will have to innovate with the aim to prepare their students.

2. A meeting of the teaching staff that is working on teachers’ training before, during and at the end of each semester.
In a university context, it is essential to place the different teachers/supervisors in situations of dialogue and interaction. To that end, it is necessary to break barriers and exclusive subject areas, separate specific teaching from science education, letting the goals and the working and evaluation methodologies be known, articulating content and goals and introducing ways of adapting when facing challenges towards entrepreneurship. It seems that the process must be led by the responsible teacher of the respective course. However, this cannot always be the key element for the good development of the process, so the active contribution of other teachers isn’t put aside.

3 - Inviting well-succeeded former students to talk about their experiences to the students.

The invitation process is beneficial in various ways. Firstly, because it will place the teacher in a process of gathering data about former students and their paths in life. Secondly, because the teacher will receive feedback about students they supervised. Thirdly, because it will bring back individuals that graduated in that institution to their alma mater, whose background will benefit it. Finally, because it will allow the supervising teacher to better comprehend the current educative contexts that they also contribute to their training. They will update and train themselves with their former students. This means that the detachment that time does to schools and their problems will be revived through the contribution of these teachers serving at those schools, updating problems and bringing important information. This will also be a way of connecting students in training to the world of work and, who knows, allowing them to discover they can have other working opportunities besides teaching at a school.

4 - Promote and participate, at the university, in various workshops and seminars, by dynamic specialists from other areas, in skills related to entrepreneurship.

Confronting other professional experiences will be especially beneficial because it will decentre the supervisor from their specific work, forcing them to enter other professional contexts and get to know other challenges, other forms of analysing situations and solving problems.

5 - Valuing volunteering.

Motivating students and accompanying them in volunteering activities. In the Faculty of Social Sciences and Humanities of the New University of Lisbon there is already allotted a volunteering program, in the undergraduate programme, that replaces a course and a corresponding final report is publicly defended in front of a jury. Extending this program to the master programmes, specifically to teacher training, would bring benefits whether to students or supervisors. These benefits would result in not only a knowledge, contact and practice with the working context from the student, as also with the involvement that teachers would be compelled to have, at the same levels, due to the accompanying and supervision of the work produced by students.

6 - Giving privilege to partnerships with schools.

It seems that, in the current process of teacher training, universities haven’t been valuing enough how important the amount that constitutes cooperating teachers, as well as the partnerships established with schools. Indeed, it seems that these partnerships are done as due to a legal obligation and need, not enjoying the same real teaching whether for supervisors/teachers at the schools, whether to their university counterparts. Both seem to collaborate by obligation and duty, setting frontiers, respecting hierarchies but not enjoying at all the knowledge that both parts possess. The dialogue with schools is essential not only because it contributes to a better knowledge of the teaching and learning contexts, from the university teachers in teacher training, but also because it enriches teachers at schools with the resulting theoretical knowledge from investigation in education. Rethinking the partnerships model and truly enjoying them appears to be something urgent and needed.
Conclusion

The appearance of new challenges causes fear. Changes cause fear. The instability experienced in our world today causes fear. Fear is human. However, it is essential to learn how to overcome fear. It is only possible by experimenting new solutions, helping each other.

The supervisor is as scared as the student. Novelty causes fear, but the worst thing is to build walls that enclosure and protect us, warding us off the attitude to face the new, the different, the unknown.

The supervisor has the fundamental role of training the student, so they will have to be the first to learn how to dialogue with innovation. You innovate by feeling, doing and experimenting. With respect and time, the experiments conducted may become new learnings in new practices. We all train each other through the interactions that we maintain with each other.

In the same manner, the supervisor also learns with the trainee and both come out enriched from this relationship.

Bibliography


20. THE YOUNGEST PERCEPTION ABOUT INTERGENERATIONAL WORK

António Carmo Ginja do CARMO

This full paper is publish in a special edition of Egitania Sciencia Journal-ENTENP 2013 with ISSN 1646-8848, September 2013, selected by the entrepreneurship editors of the journal.

Abstract: This work presents an initial study for an intergenerational project: it questions one of the generations about the perception and willingness to participate, and it targets 6 classes of the 10th year of the Bento de Jesus Caraça Professional School from the Lisbon and Seixal Delegations.

The main goal of the work is understanding the teenagers’ perception of learning developments with intergenerational projects which promote the interaction with the elderly in a continuous way. It also tries to find out the willingness of these youngsters to participate in such projects.

On the one hand, we intend to share knowledge between generations and promote the awareness of values, and on the other hand, assist in the inclusion of the older generation in the use of Information and Communication Technology, facilitate the communication between them through sharing live experiences that the young generation can use as work material in their classes, especially in ICT and Integration – curricular subjects from their courses.

To develop this intergenerational project we will count with the elderly living in retirement homes who lead an inactive life, both physically and cognitively, and the teenagers who study in a professional school.

Keywords: Intergenerational work, teenagers’ perception of elderly, interaction.
21. LEARNING TO BE ENTREPRENEURIAL IN VOCATIONAL TEACHER EDUCATION

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This paper is produced within the YVI project. YVI (2010-2013) is a Finnish nation-wide multi-science development and research project and it aims at developing entrepreneurship education for teacher education, both vocational and general. The project is financed by ESF, the Finnish National Board of Education. The purpose of the project is to develop a dynamic, virtual learning environment for entrepreneurship education aimed at the developers. The learning environment helps teachers to improve their skills in planning, implementing and evaluating entrepreneurship education. Additional goals are to increase the collaboration among entrepreneurship education developers, to improve the knowledge of entrepreneurship education and to help teacher educators to improve their pedagogical skills of entrepreneurship education.

Entrepreneurial behaviour

Behind entrepreneurial behavior is the concept of entrepreneurship and the default that entrepreneurial behavior recalls either as the behavior of an entrepreneur or behavior in context of entrepreneurship. Entrepreneurship is a multi-dimensional phenomenon and an unambiguous definition of the concept is very difficult to create (Ristimäki 2004.) In this report the phenomenon of entrepreneurship is understood broadly both as entrepreneurship, individual entrepreneurship and organizational entrepreneurship (Kyrö & Ripatti 2006.) In the context of entrepreneurship there is also talk about intrapreneurship, which refers to an organization that is behaving more in an entrepreneurial kind of way. (Js. esim. Heinonen & Vento-Vierikko 2002; Kansikas 2007.) Thus entrepreneurship exists both in terms of starting and owning a company and also in the entrepreneurial behavior of a group or an individual and in other entrepreneurial behavior (Gibb 2005), regardless of whether it occurs in one’s own company, in the service of someone else or for instance in a voluntary hobby-activity. När ollen yrittäjyyttä siis ilmenee niin yrityksen perustamis- ja omistamistoimissa kuin yksilön ja yhteisön muuna yrittäjämäisenä käytävänä (Gibb 2005) tapahtuu se sitten omassa yrityksessä, toisen palveluksessa tai esimerkiksi vapaaehtoisessa harrastustapaamisessa.

The core of entrepreneurship consists of several different factors, in which the emphasis varies depending on the presenter and the perspective. According to Koiranen and Ruohotie (2001) entrepreneurship is a holistic, responsible and innovative thought-, action- and attitude-model for work. Entrepreneurship then presents itself merely as mental capabilities – entrepreneurship is human energy
On the other hand, entrepreneurship can be looked at through affective, conative and cognitive mental attributes (Snow, Corno & Jackson 1994; Koiranen & Ruohotie 2001; Kyrö 2006). In addition to the traditional cognitive attributes related to knowledge and skills, feelings and temperament in particular can be distinguished from the affective area. Individual actions relating to feelings can from an entrepreneurship point of view be the energy evolving from an emotion, the belief in one’s own actions, empowerment, commitment, the feeling of freedom, and trust. Relatively stable personality traits, character, values and attitudes can be associated with temperament. Especially motivation factors and goal-orientation define entrepreneurship in the conative area. In entrepreneurship motivation can present itself as curiosity, imagination, vigor, energy, the direction of actions and orientation towards specific objects. (Koiranen & Ruohotie 2001)

Entrepreneurship is also strongly related to the capability to become aware of possibilities and to utilize them. (e.g. Heinonen & Vento-Vierikko 2002; Kyrö 2005; Carrier 2005; Gibb 2005; Järvi 2013.) Particularly important is then the ability to picture different situations in the future, and the belief that one can affect achieving or not achieving these through one’s own actions (Heinonen & Paasio 2005.) With other words, proactive future-shaping action is required (Heinonen & Vento-Vierikko 2002; Vesalainen & al. 2006; Kyrö 2006.) According to Schumpeter (1934) the classical definition of entrepreneurship is to be the cause of creative destruction and combining the factors of production in a new way.

Discovering possibilities is in itself at most only a part of entrepreneurship, since one should also be able to make practical use of the possibilities. In this process the most essential part is to acquire the necessary resources from different sources, and to allocate them in a profitable way. The term possibility in itself includes that things might not work out as planned. Consequently entrepreneurship is also strongly characterized by terms such as risk and insecurity (e.g. Kyrö 2006; Kyrö 2008).

In this article we are particularly interested in taking responsibility as a part of entrepreneurial behavior. Intrinsically this is closely related to other terms defining entrepreneurship, such as taking action, tolerating insecurity and taking risks, seeing opportunities, innovations, teamwork and the joy of succeeding. We look at the responsibility-related development processes of teacher students based on Paula Kyrö’s (2006) model, the construct of Learning in Risk Pedagogy. We are especially interested in the phases of risk-learning: confusion, action and the preparedness to learn risks. The starting point of the model is that students get objectives for their learning, but only a vague description of which tools are needed to meet the objectives. Most students get confused with not being able to act as passive receivers of knowledge, but having to produce their learning by themselves. Still most students activate themselves after the first confusion has disappeared, and start looking for ways to meet the objectives. This mostly leads to insights and other empowering experiences, which increase the readiness to endure insecurity. It can be said that the readiness to learn risks increases.

Entrepreneurial learning in vocational teacher education

The meaning of vocational teacher education is to support the vocational teacher in his/her personal and social growth to be a teacher. In Finland a vocational teacher needs pedagogical competence to get a job. The 60 credits wide vocational teacher education equips a person with the formal pedagogical qualifications defined in statute (1998/986, 138) about the eligibility requirements set for the personnel of the educational institution.

Vocational teacher education provides the students with the ability to direct, teach and coach vocational students for working life. The requirements of
working life largely define the expectations set on vocational teacher education. In recent years also expectations about entrepreneurship education and promoting entrepreneurship have been included in teacher training, both by the European Commission (GHK 2011; European Commission 2011; 2013) and by the Finnish government (OKM 2009). The entrepreneurship education of teacher education has been promoted e.g. by the YVI-project, which has been carried out 2010–2013 (www.yvi.fi). According to research done in the project (Seikkula-Leino, Ruskovaara, Hannula & Saarivirta 2012), entrepreneurship and entrepreneurship education are parts of the curriculum of vocational teacher education merely as contents. Kyrö (2006) has, however, challenged the developers of entrepreneurship learning to move the emphasis from contents to a dynamic learning perspective.

An important starting point in developing teaching and teacher education is that it is possible to grow into entrepreneurship. Recent studies have shown that this is actually possible (e.g. Fayolle, Kyrö & Ulijn 2005; Ristimäki 2004a; Kyrö 2001.) Inherent traits are not the only thing that counts, although indisputably they are important too. As an example, the human temperament is a group of inherent predispositions and skills, which form personality in interaction with the environment (Keltinkangas-Järvinen 2004.) In this article we focus only on the growth processes that support growth into entrepreneurship. Growth refers to a continuous learning process, through which the individual during his life path absorbs the skills that he can utilize while responding to changing demands on professional skills. (Ruohotie 2000) This definition for professional growth can be applied also on growth into entrepreneurship.

When entrepreneurship is defined in the aforementioned way and growth into entrepreneurship is seen as worth aiming for, the growth of the learner cannot include only the acquiring of specific knowledge and skills. Aiming at entrepreneurship stipulates that the learner has the ability to picture the world, the human being and knowledge in a holistic kind of way (Kyrö & Kansikas 2005.) That way the student also has to carry the responsibility for that things do not always go as planned – he/she has to be able to take controlled risks.

Teachers instruct their students to survive in life. The emphasis for vocational teachers is to promote this survival in working life. Teacher education can offer current and future teachers models of the pedagogical choices, through which it is possible to manage learning. In a test done by the HAMK vocational teacher education unit one of the goals was to gather information and experience on how the students experienced studying in which they were purposely put into a state of confusion in the beginning of the studies, in accordance with the model by Paula Kyrö.

**Learning by teaching – a pedagogic model**

Learning by Teaching (Lernen durch Lehren (LdL)) is a way to execute teaching (Martin & Oebel, 2007.) The student or group of students (in this case the group) truly acts in the role of the teacher. Each group gets the task to teach their peers a certain study module. The principles of exploratory learning, such as Problem Based Learning, are well suited for action planning. Problem Based Learning is a well-structured and instructed pedagogical model, and learning by teaching is the adaptation of it that we use here.

The starting point (trigger) can be the objective-descriptions on the subject to be taught and the criteria of competence in the curriculum. The learning occurs both through individual work and collectively in group meetings (tutorials). A chairman, a secretary and an observer are chosen for the tutorial. These responsibilities circulate from one tutorial to the other. The directing teacher serves as a silent advisor, a tutor, in the session. At the end of the tutorial he/she always provides feedback and tools to work with in the future. (Poikela 2002)
In the first tutorial all the previous knowledge that the students have about the subject is summed up. This phase is best carried out in a think-tank session, in which the group members write down the to them familiar terms that they associate with the subject. After this the terms are grouped and organized by theme. The shared learning task for the group then derives from these themes. Each member of the group chooses a theme that is of interest and researches more about it during the next work period. (Poikela 2002)

In the second tutorial each member presents the new findings of their theme, and thus the shared knowledge of the group is deepened and broadened. There can be 2-5 of these tutorials depending on the difficulty and broadness of the theme. The end product is the implementation plan for the entity to be taught. The teaching of this subject to one’s peers is carried out in accordance to this end product, using the chosen teaching, directing- and evaluation tools. The role of the tutor-teacher is to observe the work of the group and give advice when needed – he/she should however avoid forcing on his/her own opinions or ready-made solutions. The students should be left with enough room to work in order for the learning to be effective. (Poikela 2002)

Learning by teaching creates all kinds of peripheral learning, too. By shifting the power of decision-making to the students their sense of responsibility, commitment and motivation is enhanced. Successful teacher-experiences strengthen their self-confidence, and the skills of performing in front of an audience improve when the student gets to stand in front of the class and experience success. Couple-teaching helps shy students to grow. A healthy pedagogical competition emerges through the implementations. The teaching becomes rich and varied. The students learn critical information research when they get to compare their sources with each other. In addition to the subject that is being taught, the students learn practical pedagogics and didactics.

**Implementations of studies in the group of vocational teacher students**

It is stated that one learns things most thoroughly by teaching them to others. During the years 2011-2012 we used learning by teaching in the vocational teacher education at Häme University of Applied Sciences (HAMK). The pilot was part of the YVI-project carried out by the University of Turku, and nearly 50 students from regional groups from Lahti participated.

The median age of the teacher students was 40, and the education background varied from a vocational degree to a PhD. Most of them acted as teachers, but lacked the pedagogical competence. There were also those who were active in lecturing tasks in business. Most of the teachers were from the basic vocational education, but some worked in adult education or universities of applied sciences. The group together had about 1000 years of work experience. This served as a great background to us and made it possible to use the student’s individual strengths in the teaching.

We decided to apply problem-based learning. We divided the students in expert groups based on their own interest. Each group was responsible for the planning, execution and evaluation of one of the study modules of teacher education. The starting point was the curriculum of teacher education, in which the targets, evaluation objects, evaluation criteria and literature of the study module were listed. The width of the subject being thought was about 5 credits. (HAMK AOKK, Study Guide 2011-2012.)

We used PBL tutorial-sessions, in which the directive teacher of HAMK acted as a tutor. We uploaded the protocols, plans and other material from the study module to a Moodle-platform, which could be accessed by the expert group who acted in the role of the teacher. The study module was usually carried out by letting two people be responsible for one day of teaching. The whole group was
responsible for the planning of contents and learning tasks, and for evaluating the learning results.

In the beginning some change resistance could be observed in some students. They would have liked to learn in a traditional way with an expert lecturing according to the newest pedagogical doctrine. “How do we know, that we teach the right things in the right way”, was a common question. According to Kyrö (2006) this is a natural phase in risk-learning. In the process model of risk-learning the readiness to this develops through phases of confusion and action. Risk learning occurs by acting independently and together with others. The initial confusion turns into experiences of success.

The teacher education students’ feedback had always been very positive, which is why we feared that we would receive harsh critique. The common efforts of a year and a half had, however, showed that having students act as peer teachers was a good choice. The teacher students received various learning experiences and they got to practice real teaching. The average score of the feedback was even higher than that for the peer groups taught with traditional methods. These results are presented more closely in the next chapter.

Risk taking experiment in vocational teacher education

The work of the pilot group was examined both by looking at the observations carried out by the teacher students during the schooling, and by collecting information about the student’s experiences through a half-structured survey. The first survey was executed in the beginning of the studies in the fall of 2011, and the second survey in the latter part of the studies in the fall of 2012. The students were not required to respond to the survey. The first survey received 38 responses and the latter 28. Educational science student Tarja Hallavainio collected the results and presented them both quantitatively and qualitatively. The number of responses did, however not serve as a good base to quantitative analysis.

The interpretation of the results received an input also from senior lecturer Taru Dorra and principal lecturer Markku Kuivalahti, who both also participated in the writing of this article. They acted as teacher educators for the pilot group and listed their observations throughout the schooling. The results are presented in greater detail in the non-published report Analysis of a survey on expert group-work within entrepreneurship education, executed for the Häme University of Applied Sciences by Tarja Hallavainio.

The groups constructed of the teacher students were handed the responsibility for the planning, execution and evaluation of study modules for the vocational teacher education. Based on the survey that was carried out in the beginning of the studies, the majority of the students could be characterized by experiencing insecurity, and even desperation and agony. They could think that “studying will be fruitless” and “I would have chosen another group if I had known”. Many also viewed the method as laborious, time-consuming and woolly. Being in an expert-group, however, was seen as meaningful and even empowering.

In the latter survey the students’ responses and the discussions held with the students served as a base for the following categorization of the responses. Some of the students’ responses can be included in more than one group, which is why 64 responses have been used for the breakdown.

The largest group (29 responses) was a group which was named “To victory through hardships”. According to the responses, working in the group raised the expertise and knowledge of the group to the state of a shared resource. The presentation of the different views and approaches of the group members was viewed as important by many respondents. Getting to know the group members and their common way of acting had taken a while, but once the common way of acting had formed the work usually was carried out in good faith. Some of the
group members were concerned with an uneven distribution of the work-load. Some were also concerned with whether or not the other students were actually learning. Knowing one’s own subject well was, however, seen as a good thing. The students of this group were satisfied with their teacher studies at the end of their educational path.

The Enthusiastic group (12 responses) took an even more eager stand to their experiences than the aforementioned group, and they experienced the experiment as a positive, motivating and fruitful way of teaching and learning. Especially working together was emphasized in this group. The respondents described the activity of their group as "nice, positive, good interaction, participating, active, coherent and the kind that served learning, a jump into the unknown and I got a wonderful work partner, I did not really feel insecurity at all". In addition they experienced "succeeding, interaction, allogamy and identifying expertise".

Eight of the responses could be characterized as traditionally restrained. This reflected the insecurity and dubiousness of the work, and a wish to get more coaching and classroom teaching. Additionally “traditional teaching, familiar and repetitive, lectures and teaching the HAMK teachers” was voted for. The method was seen as taking too much time and energy, and it was experienced as stressful and unnecessary.

The "Happy with their part” – groups had seven respondents and they accepted the use of the method itself. The comments were very short. Five of the responses called for more independent working. They criticized the uneven distribution of work in the group and experienced their own share of the responsibility as bigger than others. They were, however, content with their own learning. Three respondents were more critical. An example of this was the comment "the term expert group should not be used in this context, because the group members do not have a deeper expertise in the subject that they are teaching; PBL was not really used here”.

In the end phase of the vocational teacher education all students also received a feedback survey. The survey that was sent out in December of 2012 received 90 responses. The number of the pilot group respondents was 20. We looked at whether there were differences in the responses of the pilot group and the other students’ responses. For finding out significance we used the t-test, which is the most common test for differences in averages. We chose 5 % as our risk phase, which means that the t-test should get the value p, which is smaller than 0.05. (Metsämuuronen 2005)

Claims related to know-how and readiness to act as a teacher were presented to the graduating vocational teachers. Throughout the whole survey the pilot group estimated their own know-how as somewhat better than that of the comparison group. Statistical differences were found for the following claims:

- I master the theory and practice of learning and direction as a basis for my own pedagogical thinking and way of working (p = 0.018)
- I understand the role and meaning of the teacher in the society (p = 0.018)
- I acknowledge the position and meaning of the vocational education in an international environment (p = 0.029)
- I acknowledge my own philosophical value frame and I act according to ethical directives (p = 0.031)
- I can direct the student towards being a self-sufficient agent (p = 0.037)

The fact that the students in the pilot group seemed to have a bigger understanding of the theoretical basis and meaning of the teachers work than the other graduating vocational teachers is a difference that could be pointed out. Of the greatest interest for this research, however, is that the students in the pilot group felt that they can direct their own students to become self-sufficient agents
to a higher degree than did the other teacher students. Based on this they also have learned to give more responsibility to their students.

Also the teacher educators experienced insecurity in the beginning of the schooling. Initially part of the students provided quite negative feedback and at that point also the teacher educators reported that they had partly doubted the sensibleness of the project. According to them the couple teaching had served as the greatest resource in this phase. They supported each other and felt strong enough to continue the experiment. As did the students, also the teacher educators felt they had succeeded quite well at the end of their studies and especially after having received the final feedback.

Conclusions

According to the feedback both from the teachers and the students the size of the groups (9 persons) was too large. The division of labor is too challenging in such large groups. The optimal size could be about 4 persons in a group. This is good to take account of in the future.

Overall we can make the conclusion that the pilot experiment succeeded very well. It can be shown with the evidence of received feedback and the experiences of the teacher educators. This encourages us to develop the implementation of whole vocational teacher education in the direction of experiment. In the background of implementation of pedagogic are ontological and epistemological understandings of teachers. They should give support for seeing the students as unique, free, responsible, curious and daring actors (Kyrö 2001.) The students should be given responsibility and trust. This requires the teachers and teacher educators fully new models of implementation instead of the old ones.

The implementation of the new kind of a model is at least as laborious as the old one. In their feedback the teacher students wanted encouraging attitude. They don’t want to be abandoned if there are signs of slowdown in their studies. They want the teacher educators to inspire them to use different types of teaching methods. They should take more care of the group dynamics and the division of responsibility in groups. In addition they wanted more:

- guidance in information technology,
- clear timetables, standards and objectives,
- leadership and clear roles especially in the beginning,
- close group working and
- ready division of labor, because the work was divided too rough.

These comments refer to dissatisfaction. However, we should notice that these comments have been given as answers when the student were asked about the ideas of development in the future. But, of course, the also tell us that maybe somewhere inside of their souls they need traditional education.

Teacher education and training offer both current and future teachers a model that might be observed in the reality of vocational teaching. Good experiences of taking responsibility in own teacher training likely to contribute in the teachers own work.

The feedback of the teacher students refer to the succeed of the experiment. They are able to guide their students for self-directive learners more often than the other teacher students. In addition they manage the theory of learning and guidance as a basis of practice and understand the position of a teacher in society more often than the other teacher students. It can be supposed that they also use these experiences in their own teaching practices.

Discussion about the entrepreneurship education has been concerned mostly the basic, secondary and high level education. It would be important to develop and make research especially in teacher education and training. Because it, as told before in this article, offers an important basis for the work of teachers. The models used in teacher education disseminate in teaching practices.
However teacher education or training has been reached quite less among entrepreneurship education. In Finland there was implemented during the years 2010-2013 YVI-project that was specialized in developing entrepreneurship education in Finnish teacher education. There has been made and started many interesting researches. There are for example researches of the strategies and curricula of the teacher education organizations, the implementation of the entrepreneurship education in teaching, entrepreneurial behavior and learning and learning environments. Thus, Finnish discussion has started and one meaning of this paper is to take part in this discussion. In European forum there are for example European Commission and GHK have called for a research especially in teacher education for developing entrepreneurship education. We hope that we have succeeded to bring something more in this discussion with our paper.

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1. Introduction

Improving business productivity has to do with technological and organizational improvements. When many Spanish companies are closing their doors, the productivity gains are also passed to facilitate the process of creating modern enterprises, internationally competitive and sustainable in the long term. This requires guiding the economic system toward innovation and entrepreneurship. Other countries (Finland, Israel, etc.) have done in no time, launching incubators state programs and joint venture companies with entrepreneurs that in a few years have yielded spectacular results.

Spain should follow suit. The assumed productivity growth, therefore, support research and development (R&D), ensuring that these research programs become business projects will create jobs. It must ensure that the technology policy for a target to contribute to economic development and have research excellence centers connected with the needs of the private sector, able, therefore, to ask and respond to market needs. According to the Ministry of Economy and Competitiveness, exports grow in 2012 by 3.8% to 222,643,9 M€.

The commitment to the promotion of entrepreneurship and entrepreneurship has led the Government of Spain to implement different measures, all aimed at getting to agree to entrepreneurs, freelancers, investors and experts who have long been claiming them.

Among the actions undertaken by the Government of Spain on the promotion of entrepreneurial culture included the adoption by the Council of Ministers on May 24, 2013, the draft Law on Support to Entrepreneurship and Internationalization, which provides enter into force in January 2014, and identifies five strategic lines of action:

- Facilitate culture and entrepreneurship.
- Supports Social Security tax and entrepreneurs.
- Support funding for entrepreneurs.
- Promoting business growth and hiring.
To promote the internationalization of the company and the Spanish economy.

With regard to the promotion of entrepreneurship in education, establishing the specific objectives incorporating all stages of education to promote the initiative, competencies and entrepreneurial skills.

Nationally, there is a wide range of initiatives to promote the development of building technology companies, among which we can highlight, NEOTEC Initiative, developed by the Center for Industrial Technological Development (CDTI), the State Foundation Genome Spain; Uniprojecta program promoted by Universia and Student Affairs University Network (RUNAE), the UNIRISCO venture capital fund, venture capital first University authorized by the National Securities Market BIOANCES initiative, promoted National Association of Spanish BICs and Genome Spain, etc.

At the regional level, interest in the generation of new businesses has made regional and local governments, in partnership with the European Business and the Universities have developed alternatives. In this sense made of the Program for Business Creation and Development of High Value Added, called CAMPUS Plus, sponsored by the Agency for Innovation and Development of Andalusia (IDEA).

The University of Granada is committed to the promotion of entrepreneurship and the creation of knowledge-based companies (spin-off) as a basic tool for the use of innovative technologies developed at the university. This option is considered one of the best ways of transfer, as it not only allows the university community reaps the fruits of their research, but enriches the regional production network and facilitates the integration of graduates into the labor market.

In the current socio-economic situation, marked by the crisis of the traditional productive sectors and continuous change, promote these business initiatives and contribute to its consolidation becomes one of the priority actions of the transfer model.

The University of Granada makes a clear commitment to generating motivation activities, pregnancy and planning for the design, development and implementation of new joint projects that create innovative new products and services of high quality that allow market access.

In this regard it is noteworthy the work carried out by the Results Transfer Office (TTO) of the University of Granada, from which it has developed and set up a project called "The Entrepreneurial Route", which focuses on one of the most important aspects associated with the new models of knowledge transfer: the promotion of entrepreneurship and business creation as a valid alternative to bring to market R&D emerged from the University.

2. The Entrepreneurial Route

The entrepreneurial Route was born in the year 2009. The project centres on one of the most excellent aspects associated with these new models of transference: the creation of companies, Spin-Off, like a valid alternative to carry out the transference of knowledge, the R&D, and/or technologies arisen from the University. The targets of The Entrepreneurial Route are the following:

- To encourage the entrepreneurship culture in the university community.
- To encourage the development of managerial projects.
- To introduce transverse lines of training in the University of Granada.
- To promote the link with the socioeconomic environment.

The Entrepreneurial Route is directed to the university community, with the aim of encouraging an entrepreneurial culture within the university environment, and to promote and facilitate the development of business projects.
2.1. The university entrepreneur

There are many factors to consider when it is decided in favour of the creation of a company, spin-off, like route of transference: the product, which is usually associated with capacities and/or turned out the R&D; the entrepreneur and the human resources of the company; the demands and needs of the market, etc. The project “The Entrepreneurial Route” centres on the second one of these elements: the entrepreneur.

In case of the university entrepreneur, we can consider a wide range that goes from the researcher (as the closest to the research and innovation), goes through grant holders, PhD students and postgraduate students (linked with the research and with his groups, although with a not so close relation than that of the researcher) and ending up in last course students (less linked with the research and more with the knowledge). In general terms, we might classify them under three groups:

1. Teaching and researching personnel with a permanent link (PDI and PAS).
2. Education and Research training personnel without a permanent link.
3. PhD, Master, or last course students.

The way of gaining access to the different types of entrepreneurs is very different according to the group to which they belong: in case of the PDI, they are personnel with already defined professional aims, without any formative common plans that allow them to introduce entrepreneuring aspects; the other two categories have a common point that facilitates the process: it is a question of personnel being trained and, therefore, accessible across the teaching associate structures (doctorate courses, master courses, centers, etc.). Any entrepreneur of the previous groups will be able to gain access to “The Entrepreneur Route”, being different the way of confronting it according to the origin of the entrepreneur.

In case of PhD students, masters or last course, it has be chosen to gain access to them across the master coordinators, and in collaboration with the Vicechancellorship of Education of Grade and Posgraduate of the University of Granada. More specifically, masters have been organized by sectors, so that it is associated with a profile of interest in the enterprising sector. The advantages for the master student are clear: on one hand, transverse formation joins the master programs (common for all), and, on the other, formation for the student in aspects related to management (always demanded and usually absent in the education programs) is incorporated.

2.2. Phases of the Entrepreneurial Route

The Entrepreneurial Route consists of three phases that increasing gradually the dedication time. They will introduce the participant in the various aspects of entrepreneurial culture, without saturating with dense formative courses, simultaneously that offering hardware that allows waking up the entrepreneur facet. In general terms, three phases are defined of the following form:

1. **Visits to the European Center of Companies and Innovation (BIC Granada) and to the incubator of companies placed in the Health Sciences Technological Park (a morning of duration).** Are shown “in situ” the mechanisms and organisms that take part in the creation of a company and a small chat will be given by an entrepreneur who will tell them his personal experience. Also he will be led to visit companies related to his area of interest so that they know experiences of other partners.

2. **Workshops for entrepreneurs (two days of duration).** For those that have showed interest in the first phase, there will be given specific workshops destined for the motivation and entrepreneurs’ recruitment.

3. **Training course (ten days of duration).** For those who want a more specific formation, an advanced course on creation of companies is offered, elaboration of plans of management development, practical cases, simulations, etc.
The aim is to try that the highest number of potential entrepreneurs will pass through the First Phase, accessing the other phases depending on their interest. Thus, the first phase will be an awakening of the entrepreneur spirit in those who have it so, voluntarily; they will be registering in the following phases those that show a major interest.

One of the key for the success of the project is being carried out in collaboration with other actors of Regional Government of Andalusia (Agency for Innovation and Development of Andalusia and Andalusian Enterprise, Andalusian Public Foundation).

2.3. Sectors and date of realization

To carry out the first phase of the route six strategic sectors have been considered by the Economy, Innovation and Science Regional Ministry, so a visit to the European Center of Enterprises and Innovation (BIC Granada) will be carried out for each sector.

These sectors are:
A. Biotechnology and Life and Health Sciences
B. Information and Communication Technologies (ICT)
C. Environment, Renewable Energies and Agriculture
D. Industries of Creative and Cultural Base
E. Social Aspects and Humanities
F. Enterprise Management and Juridical Aspects

The Entrepreneur Route is performed annually during the months of April to May / June.

3. Results

The Since its inception in 2009, The Entrepreneurial Route has had the participation of more than 500 members of the university community, including students and teaching and researching personnel, coming mostly from the fields of Information Technology and Communication and Health Sciences.

Differentiating the participation in different sectors, it is important to note the following:

<table>
<thead>
<tr>
<th>SECTORS</th>
<th>Nº PARTICIPANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Biotechnology and Life and Health Sciences</td>
<td>171 people</td>
</tr>
<tr>
<td>B: Information and Communication Technologies</td>
<td>114 people</td>
</tr>
<tr>
<td>C: Environment, Renewable Energies and Agriculture</td>
<td>53 people</td>
</tr>
<tr>
<td>D: Industries of Creative and Cultural Base</td>
<td>45 people</td>
</tr>
<tr>
<td>E: Social Aspects and Humanities</td>
<td>72 people</td>
</tr>
<tr>
<td>F: Enterprise Management and Juridical Aspects</td>
<td>57 people</td>
</tr>
</tbody>
</table>

Table 1 - Number of participants by sector

As shown in the above table, the sectors with the greatest influx of participation in the entrepreneurial route were the sectors of Biotechnology and Life and Health Sciences, Information and Communication Technologies and Social Aspects and Humanities.
Participants completed all three phases of the program: visiting business incubators to know the experience of other entrepreneurs, the specific workshops aimed at motivating and attracting entrepreneurs and advanced training Course on Entrepreneurship.

The Entrepreneur Route aims to promote entrepreneurial culture, as well as promote and facilitate the development of business projects. Its beginning has meant has supposed an evolution in the number of Spin-Off of the University of Granada constituted. This evolution has been as it follows:

- In 1991 the first Spin-off of the UGR was constituted.
- From 2001 to 2005 another 10 companies were created.
- From the year 2009, in which it began The Entrepreneur Route, the average of Spin-Off constituted has been 10 for year.
- In this year 2013, 10 companies have been created.

Currently, the University of Granada has a total of 80 spin-off activity. The following Table lists classified by sector:

<table>
<thead>
<tr>
<th>SECTORS</th>
<th>Nº SPIN-OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information and Communication Technologies</td>
<td>24</td>
</tr>
<tr>
<td>Biotechnology and Life and Health Sciences</td>
<td>22</td>
</tr>
<tr>
<td>Environment, Renewable Energies and Agriculture</td>
<td>13</td>
</tr>
<tr>
<td>Social Aspects and Humanities</td>
<td>11</td>
</tr>
<tr>
<td>Industries of Creative and Cultural Base</td>
<td>4</td>
</tr>
<tr>
<td>Enterprise Management and Juridical Aspects</td>
<td>4</td>
</tr>
<tr>
<td>Production Technologies</td>
<td>2</td>
</tr>
</tbody>
</table>

The number of jobs generated by the spin-off of the University of Granada is 424, with an average number of employees per spin-off of approximately 5 employees.

As a show of support to the consolidation of the companies promoted by the University of Granada, through the TTO, offers of the Spin-Off of the UGR and the scientific and business community “Spin-Off Web UGR”.

The Spin-Off Web UGR is a showcase that supports companies promoted by the University of Granada, where own spin-off can offer their products and services, manage potential claims of other external entities, access to promotions and offers that are launched specifically for them, and have, among other services, daily updated information on grants, events, news of interest, etc.
Conclusion

The Entrepreneurial Route emerges for the university community to address the lack of cultural values regarding entrepreneurship, lack of opportunities that entrepreneurship and business skills development.

The project achieved the objectives originally proposed by both the results obtained by the participants as to the achievement of the necessary qualities to manage and run a business, such as progressively create a culture of entrepreneurship at the University of Granada.

The best education, general business skills, makes it more likely that a country has whatever business dynamics. An institutional framework that embraces a set of social and cultural values, to promote entrepreneurship and new business creation, is a prerequisite for business and a defining feature of an entrepreneurial society.

The Entrepreneurial Route is presented with the intention to provide a model-based project cooperation between provincial and regional entities that share the objectives described above, in order to optimize available resources and define competencies, innovation through a flexible program able to adapt to the new needs and demands of the environment, and finally, on sustainability in time to allow us to maintain a link between organizers and participants once the program. In short, a set of goals and values that can spread to the rest of Europe, to enrich the productive and professional facilitate the incorporation of the labor market.

As a last point indicate that The Entrepreneurial Route Project was selected to represent Spain in the European Awards for Enterprise Promotion 2012, for introducing an entrepreneurial culture into the University community.

The European Enterprise Promotion Awards are held by the European Commission and organized in collaboration with the Committee of the Regions, to recognize and compensate government initiatives aimed at promoting entrepreneurship in the national, regional and local level, while highlighting the importance that entrepreneurship plays in economic and social development in Europe.

References

Results Transfer Office (TTO) of the University of Granada. (http://otri.ugr.es).
Spin-Off Web UGR. (http://spinoff.ugr.es).