ENTREPRENEURSHIP EDUCATION AND PROBLEM-BASED LEARNING

Carlos Reis[1]
Maria Formosinho[2]

Abstract

In this paper we draw on the concept of Entrepreneurship Education and describe the Budapest Agenda and its Progression Model for Initial Teacher Education. The concept of entrepreneurship and entrepreneurship education is discussed. We than sketch the origins of Problem-Based Learning (PBL), comparing it to the traditional paradigm of learning. A specific reference is made to creativity importance for education, broadly conceived and EE in particular. PBL features and process are presented in order to give a practical insight regarding its educational appliance. Finally we try to show PBL's potential for fostering Creativity and supporting Entrepreneurship Education.

Keywords: Entrepreneurship, teacher education, Problem-Based Learning, Creativity

1. From the Lisbon Strategy to the Budapest Agenda on Entrepreneurship Education

The Lisbon Strategy (European Commission, 2000) acknowledged entrepreneurship contribution to the EU economy and recently Europe 2020 Strategy (European Commission, 2010) has also drawn on its development.

One could ask what we mean when we refer to "entrepreneurship". The Green Paper on Entrepreneurship in Europe (Comission of the European Communities, 2003), states that entrepreneurship is multi-dimensional and it can occur in different contexts, aside the business field, but it always involves the exploitation of creativity or innovation. "Entrepreneurship is first and foremost a mindset. It covers an individual's motivation and capacity, independently or within an organization, to identify an opportunity and to pursue it in order to produce new value or economic success. It takes creativity or innovation to enter and compete in an existing market, to change or even to create a new market. To turn a business idea into success requires the ability to blend creativity or innovation with sound management and to adapt a business to optimise its development during all phases of its life cycle. This goes beyond daily management: it concerns a business' ambitions and strategy" (Comission of the European Communities, 2003, 4).

Although entrepreneurship is a conditional asset required by competitive economies, we should keep in mind that the aim of the European Union doesn't confine only to economy. The EU also aims to be an intelligent and sustainable society; issues that pertain social cohesion, employment, inclusion and sustainability, among other desiderata, like freedom, democracy and

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[1] CEIS2O, Universidade de Coimbra; Instituto Politécnico da Guarda.
[2] CEIS2O, Universidade de Coimbra; Universidade Portucalense.

emancipation. Being these, in our point of view, the real 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 (Pring, 2003). So we do not really aim to raise entrepreneurs at the age of ten, but to raise creative people that can be successful entrepreneurs in all areas of their lives. This means we should be aware of not focusing entrepreneurship in a narrow sense, as the European Commission very well states in the following quotation:

> "Much debate surrounds the meaning of entrepreneurship education, and different definitions can apply in different countries and at different levels and phases of education. Recent thinking has shown that narrow definitions based around preparing learners for the world of business may place limitations on both learners and the teaching community. Instead a broader definition which sees entrepreneurship education as a process through which learners acquire a broad set of competencies can bring greater individual, social and economic benefits since the competences acquired lend themselves to application in every aspect of people's lives. Entrepreneurship in this sense refers to an individual's ability to turn ideas into action. It includes creativity, innovation, showing initiative and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. This supports everyone in day-to-day life at home and in society" (European Commission, 2011, 2).

This does not mean that we shouldn't deepen our understanding about what entrepreneurship entails as a mind-set or a set of competences, attitudes and behaviours. Creativity is by all means a main feature required for being entrepreneur. "Yet there are certain common characteristics of entrepreneurial behaviour, including a readiness to take risk and a taste for independence and self-realization" (Comission of the European Communities, 2003, 5-6), among others, that should be mapped and taken into account.

The "Recommendation of the European Parliament and of the Council on key competences for lifelong learning" states that competences are "a combination of knowledge, skills and attitudes appropriate to the context. Key competences are those which all individuals need for personal fulfillment and development, active citizenship, social inclusion and employment" (2006, 13). Among the eight key competences the "sense of initiative and entrepreneurship" is put forward as "an individual's ability to turn ideas into action. It includes creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. This supports individuals, not only in their everyday lives at home and in society, but also in the workplace in being aware of the context of their work and being able to seize opportunities, and is a foundation for more specific skills and knowledge needed by those

establishing or contributing to social or commercial activity. This should include awareness of ethical values and promote good governance" (European Parliament and the Council, 2006, 17).

As it has happened before regarding several European issues, it became broadly recognized that teachers have a critical role to play in the development of entrepreneurship education. In fact, a study mapping "Teachers' preparation for entrepreneurship education" has confirmed that successful implementation of entrepreneurship education is strongly dependent on teachers' interventions in the classrooms (Gibb, 2005). Thus, it is very wise to focus in fostering EE among teachers' educators as well as to give them the suited training on the subject and related fitted pedagogies. Besides, we also need to foster a new paradigm that envisages education institutions as entrepreneurial organizations, classrooms as entrepreneurial places and teachers as enterprising people.

Taking the above mentioned into special account, the European Commission has been making a strong effort 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. The main concern of the Symposium was to determine "how best to equip teachers with the skills, knowledge and attitudes they need to foster the entrepreneurial mind-sets of young people". The results of the Symposium came to be known as the Budapest Agenda for Entrepreneurship Education (EE).

Two workshops where then organized during 2012 aiming at: discussing the current state of the art; presenting the challenges; collecting and sharing good practice examples; inviting people to discuss new ideas; discussing and refining a progression model for implementation.

Accordingly to the former, the aim of the 'Budapest Agenda' is to provide a catalogue of measures to be drawn upon by stakeholders at all levels within the worlds of education, business and the wider community in order to take forward the development of teacher education in entrepreneurship. It draws on the work and experiences of practitioners and policy makers from across Europe, EU partner countries from the EU pre-accession and Mediterranean neighborhood regions, and is backed up by good practices, as evidenced by report of the "First workshop on enabling teachers for entrepreneurship education – initial teacher Education" (Baldassarri & Curavic, 2012).

As it is recognized, globalisation and technology development have increased business opportunities, but the marketplace has also become more competitive. So, creativity has been viewed as the core of entrepreneurship, although in an entrepreneurial sense there should also be a

subsequent link to social or technological innovation and monetary profitability. Nowadays the contribution of creativity to change economies makes it central to business; in this sense, entrepeneurship includes creativity and risk- taking, as well as competence to translate ideas into action.

2. The origins of PBL

According to Schmidt (1993), PBL as an instructional method sprouted from the rationalist tradition and its parallel guise of constructivist psychology, which could be traced back to Kant, Dewey, Piaget and Bruner. In these authors one can find the importance of available cognitive structures, the role of independent learning and intrinsic motivation, as well as the emphasis on personal active construction, the role of problems as learning starting points and of interaction with real-life events.

Although having long roots on the rationalist and constructivist traditions, in the particular sense of a concrete instructional method, PBL made its appearance in the 1950s and 1960s as a reaction to the bucket theory that used to dominate medical education, within which was assumed that "If medical students were filled with the requisite foundational knowledge, they would be able to strategically retrieve and direct just the right subsets of it toward problems of clinical practice" (Allen, Donham, and Bernhardt, 2011, 21).

The following scheme[3] compares the traditional framework of learning with PBL:
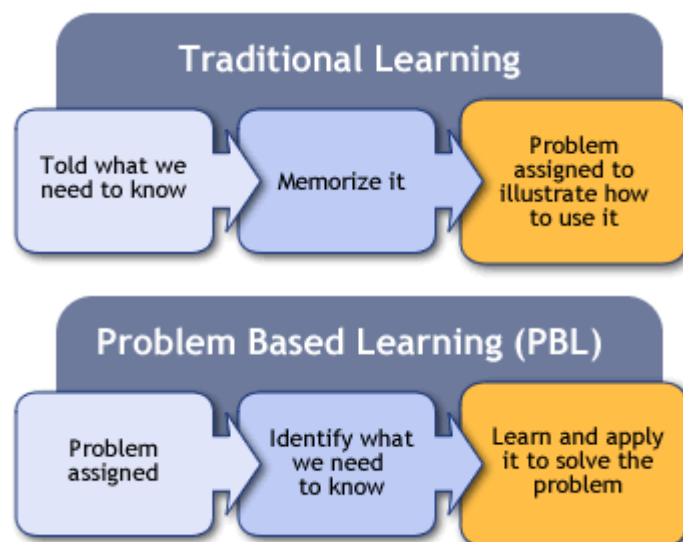

Figure 1: Comparison of Traditional Learning with PBL

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[3] Retrieved from http://presentlygifted.weebly.com/problem-based-learning.html

However, due to the exponential expansion of medical knowledge and the flaws of the bucket theory, PBL came to be proposed as a better option for addressing clinical practice by presenting complex typical cases of real patients as the pretext for learning and thus demanding from students an integrated and multidisciplinary knowledge base for problem-solving.

In the idealized learning cycle of medical education, the process usually evolved as follows (Allen, Donham, and Bernhardt, 2011, 22):

> Students working in teams learn by solving real or realistic problems. Students grapple with a multistage, complex medical case history, which offers an engaging and memorable context for learning. As they define the problem's scope and boundaries, student teams identify and organize relevant ideas and prior knowledge. The teams form questions based on self-identified gaps in their knowledge, and they use these questions to guide subsequent independent research outside the classroom, with research tasks parceled out among team members. When the students reconvene, they present and discuss their findings, integrating their new knowledge and skills into the problem context. As they move through the stages of a complex problem, they continue to define new areas of needed learning in pursuit of a solution. In the case of this original PBL model, a solution is an accurate diagnosis and recommendation of successful treatment of the patient.

Since the primitive experiences within medical education, PBL has expanded its domains of appliance. The prior successful results induced essays in very distant teaching fields, like psychology and mathematics. For instance, Reis (2013) has tried to show how it could be applied to organize philosophy's teaching and learning processes.

3. PBL features and process

According to Barrows (1996) PBL presents the following features:

1. Student Centered Learning;
2. Learning is done in Small Student Groups, ideally 6-10 people;
3. Teachers acting as facilitators or tutors guide the students rather than teach;
4. A Problem forms the basis for the organized focus of the group, and stimulates learning;
5. The problem is a vehicle for the development of problem solving skills and stimulates the cognitive process;
6. New knowledge is obtained through Self-Directed Learning (SDL).

PBL process could be described as a cycle (Schmidt, Rotgans & Yew, 2011; Woei, 2011):

1. Learners are presented with a problem and through discussion within their group, activate their prior knowledge.
2. Within their group, they develop possible theories or hypotheses to explain the problem. Together they identify learning issues to be researched. They construct a shared primary model to explain the problem at hand. Facilitators provide scaffold, which is a framework on which students can construct knowledge relating to the problem.
3. After the initial team work, students work independently in self-directed study to research the identified issues.

4. The students re-group to discuss their findings and refine their initial explanations based on what they learned.

A more clarifying way of presenting PBL process is provided at Exploring the Environment (2014):
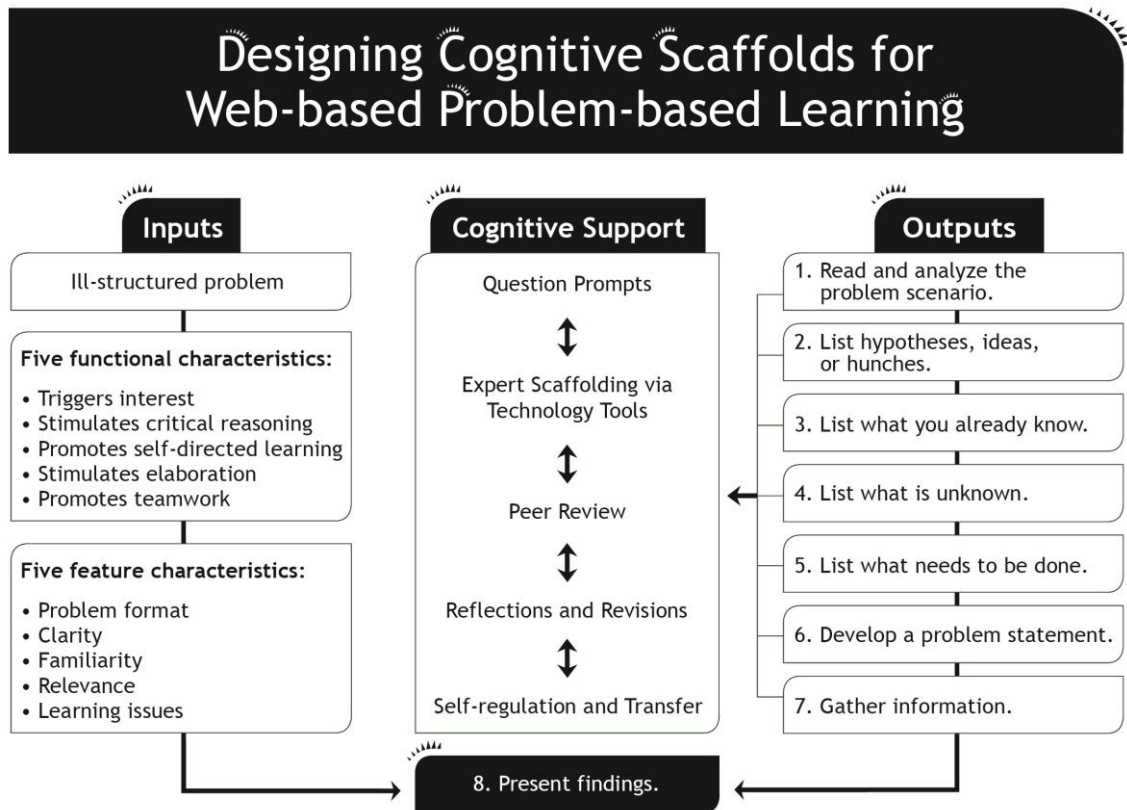

Figure 2: Designing Cognitive Scaffolds for Web-based Problem-based Learning

Regarding PBL's ambits of appliance, Edens (2000) refers a broad array: Medicine, Mathematics, Exact Sciences, History, Arts, and even Law and Psychology. This means we could use it for many disciplinary and even interdisciplinary purposes, in order to address a broad range of issues from simple to complex ones.

4. **Problem Based Learning potential for fostering Creativity and supporting Entrepreneurship Education**

Competitive and entrepreneurship based societies from the 21st century require a broad new range of skills among which one should highlight creativity and active problem solving. That's why entrepreneurship education has being raised to a core priority. Unfortunately, such competences are not strongly developed within traditional university course work that usually rely more in transmissive methodologies, as lecture format presentations followed by well-structured problems. This take us to consider Problem-based Learning as a constructivist

teaching model that by proposing to students an authentic and open-ended problem of everyday life stimulates acquisition of both content and problem-solving skills (Edens, 2000). Within such a challenge, one can easily expect that creativity becomes broadly requested and promoted. In our point of view, creativity is not just one more skill to be developed; it is the background of a requested new disposition.

It is often noticed a "décalage" between education and the labor market, however one should not envisage teaching and learning as a simple adaptation to strict economic demands. Our societies don't just need efficient professionals; complex and dynamic societies need active, critical and imaginative citizens, not just for the economic realm but broadly to be interventional within social cultural domains. That is why we should not aim for a narrow scope that left aside the entailed complexity of other crucial issues like sustainability and justice. In order to cope with such complexity we need to redefine learning environments, privileging methodologies that anchor learning in authentic real-world problems and favor student's active role in constructing knowledge and in actively engaging in problem solving, within a cooperative framework. Such a context could provide active, meaningful and socializing learning activities, which are much more powerful than traditional pedagogical approaches regarding student's motivation, especially when it comes to open up a space for creativity to bloom.

As a concept, creativity must be taken in a complex, multidimensional, open and comprehensive approach rather than narrow and specifying one, if we want to avoid an arbitrary truncation (AA.VV., 2013). As for a provisional definition we could use the one given by Abele and Kihrnere (2013, 21): "We understand by creativity as being the ability to see the world around us in a personal view – not accordingly with a specialized perspective or a given model. To be creative implies developing flexible thinking, which is the basis of all the process". Regarding such an approach becomes very evident what PBL can do for creativity.

In fact, PBL could be considered as a methodology suited for a complex approach to learning that takes the student as the focus of the process and refers to a set of core competencies, around which subject/discipline areas are articulated in order to develop engaged thinkers, ethical citizens and entrepreneurial persons (Figure 3):
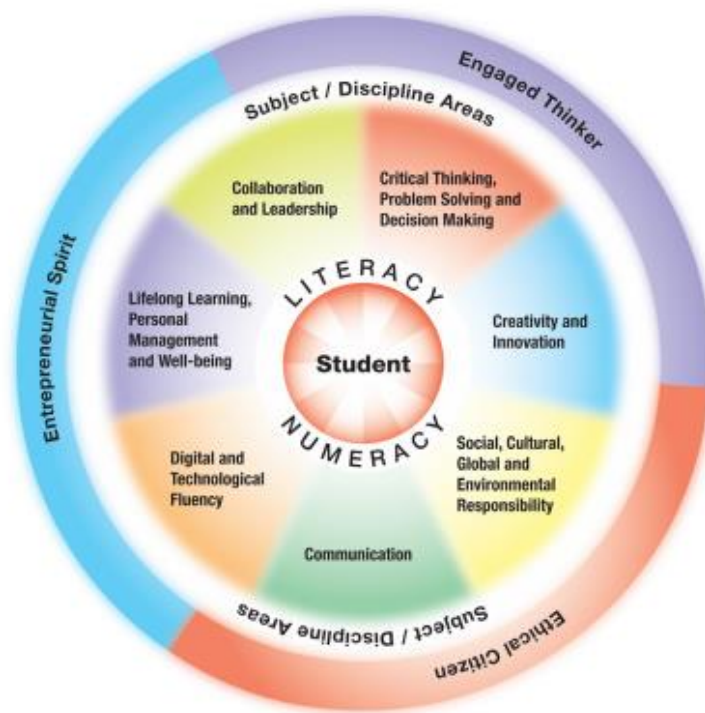
Figure 3: Framework for student learning (Government of Alberta, 2011, 2)

A final reference must be made to the potential of PBL for fostering Entrepreneurship Education. Based on all that have been discussed above, we expect that PBL has ground potential for EE considering a set of reasons:

1. PBL focus on meaningful problems;

2. PBL raises intrinsic motivation;

3. PBL induces autonomous and collaborative work;

4. PBL motivates meaningful research;

5. PBL induces knowledge self-construction;

6. PBL anchors knowledge in memory;

7. PBL propitiates meaningful knowledge appliance and knowledge transfer;

8. PBL fosters creativity;

9. PBL promotes critical thinking;

10. PBL propitiates the search for practicable solutions;

11. PBL could develop an entrepreneurship mindset.

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