# COMPETENCES FOR CO-ENTREPRENEURSHIP: contribution to the understanding of the concept for Entrepreneurial education

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**ABSTRACT**

Considering the current knowledge society where young people need new skills, the aim of this paper is to introduce the concept "co-entrepreneurship"[3] based on several studies about competences for the twenty-first century. As well as studies about Collective Intelligence (Lévy, 2000), Network Society (Castells, 2002), Multiliteracies (Selber, 2004) and Meaningful Learning (Ausubel, 2003). The concept co-entrepreneurship is constituted by the prefix "co" which means "collaboration" and the word "entrepreneur" that it's becomes subject of actions that it performs, the dreamer and makes it happen. This paper aims to identify what educators think about the role of schools, particularly if the formal education should prepare them to be entrepreneurs. This case study focuses on 13 students, educators and researchers of "*Agentes Digitais*"[4] project, who participated during two months on the weSPOT[5] online inquiry environment. Participants discussed and reflected on the importance of entrepreneurship using synchronous and asynchronous interfaces collaborate to define the concept. After analyzing the discussions, evidence shows that participants consider co-entrepreneurship a significant issue because born of digital technology as social practices, an educational approach in which young people have dared to investigate, to analyze the local community and promote solutions, thus fulfilling their ideas (their dreams): they have created, shared and collaborated in the realization of their entrepreneurial projects involving digital technologies.

Key Words: Co-entrepreneurship; entrepreneurship education; Digital Literacy

## 1. Introduction

Facing a knowledge society that demands new skills of young people and based on the matrix of key competences for co-learn and co-research in the digital age, proposed by Okada et al. (2013, 2014), the aim of this paper is to deepen the "Entrepreneur" in order to signal the concept Co-entrepreneurship (Entrepreneur in Network). This study is integrated into the PhD in Education, specializing in Educational Technology, ongoing project, at the University of Minho, Institute of Education, which aims to investigate the possible changes in the lives of young people entering the Entrepreneurship and Digital Information and Communication Technology (DICT) axis in a entrepreneurial education perspective.

The development of the project "Agentes Digitais" (empirical research) involved young

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[3] The concept to the development of skills in the entrepreneurship education.

[4] The "Digital Agents" project was a training project, implemented with young people from Fortaleza (1st step) and Braga (2nd step) entrepreneurial education with ICT, where young people designed and performed many projects of social entrepreneurship with digital technologies.

[5] weSPOT – "Working Environment with Social Personal and Open Technologies for Inquiry based Learning"

people in Brazil (Fortaleza) and Portugal (Braga) and finds its reference in the National Strategies for Entrepreneurship Education at School in Europe (European Commission, 2012), because when crossing the study results with the orientations of the reputable commissions, as UNESCO, 2013, Alberta Education, 2010; 2011; OECD, 2013, studies by Colearners21 group, in which one of the authors takes part, we can perceive the change of paradigm in the conceptual development of co-learning environments that encourage initiative, creativity, collaboration, openness and innovation to apprentices and teachers in their connections with the world of work and entrepreneurship spirit.

Thus, the principles of co-learning referenced in the research group Colearners21 project have also been integrated in this research, given that the "co-learning refers to open and collaborative learning that promotes the co-creation, co-authoring and the collective construction of knowledge developed by participants in Web 2.0" (Okada et al, 2013, p.7). All this, to understand what the challenges for the Networked Society and how education can help to develop new opportunities for young people who need new skills to pursue that new society.

## 2. Studies on skills for the twenty-first century

The interaction with the studies on the twenty-first century skills (Okada et al, 2013, 2014), adds an advanced discussion to the project, also imbricated in the concepts of Collective Intelligence (Lévy, 1998), Network Society (Castells, 2002 ), Multiliteracies (Selber, 2004) and Meaningful Learning (Ausubel, 2003) that will illuminate the studies Co-entrepreneurship that by the prefix "co" adds concepts that collaborate on educational, communicational and business areas, and the word "entrepreneur" which means it's become subject of actions that it performs, the dreamer and makes it happen (Dolabela, 2003).

These theoretical approaches made us to wonder: are we preparing our young people to entrepreneur in this Society? How important is this collaboratively entrepreneur?

In studies about education, linking the concept of digital literacies to the development of entrepreneur, we can bring the study of entrepreneurial learning in the digital age (Senges, Brown & Rheingold, 2008) to highlight that digital literacy goes beyond access and content, as it develops social practices in the network: "Next to the intellectual skills of cyber literacy, it is important to allow students to learn how to interact with others and how to be socially online" (idem, p. 127). Studies about "digital literacy" (European Commission, 2008; Alberta Education, 2011) emphasize it to be reflected, and the use of computers to retrieve, access, produce, present and exchange information, in other words, it should also include the strand to communicate and participate in

collaborative networks on the internet[6], highlighted aspects for implementation strategies of entrepreneurial education in schools (European Commission, 2009; 2012).

With the development of this research we found that co-entrepreneurship skills born of Digital Information and Communication Technology (DICT) as social practices, in a educational approach in which young people dared to investigate, to analyse the local community and to promote solutions, thus fulfilling their ideas (their dreams): collaborated in the realization of their entrepreneurial projects involving digital technologies (Souza & Silva, 2013b). Moreover, in the research found that these skills are also connected to the tranverse actions as: initiative, decision making, teamwork, flexibility, problem solving, adaptability, all related to DICT, in projects that young people (digital natives) have dared to undertake (idem).

In the study of the concept of Co-entrepreneurship, we will resume the guidelines proposed by Perrenoud (1995) that, in educational issues, connects the concept of skills to the workplace and social practices, featuring skill as Man's know-how in complex situations.

Beyond this concept, it is important to consider the technical reports of the organizations (such as OCDE, 2005; Alberta, 2010; 2011; EC, 2009; 2012), previously cited, which recommend the development of skills in the educational system and the ability to solve problems, be creative, have perseverance, act with passion, teamwork and seek opportunities. We call these features transverse skills, we also find in the words of Dolabela (2003) to conceptualize the entrepreneur as "someone who dreams and seeks to transform the reality", a being who has initiative, autonomy, self-confidence, optimism, need for achievement, has perseverance and tenacity to overcome obstacles, and knows how to set goals and achieve them.

In our study we reinforce that there is a need to mobilize these entrepreneurial skills in young people living in a Networked Society, in other words, the importance of the Network to entrepreneur, by designating such desire for Co-entrepreneurship.

There are experiences with entrepreneurship education in several European countries, including Finland, the UK and Denmark (European Comission, 2009; 2012), which also are in that entrepreneurship education context to provide students with the key competences to deal with the many challenges of a globalized and uncertain world, when nothing seems to last (Bauman, 2001).

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[6] "Digital literacy is the skills required to achieve digital competence, the confident and critical use of ICT for work, leisure, learning and communication" (EC, 2008, p. 4).

In addition to these experiences, we believe that the educational model of the government of Alberta (province in Canada) presents an innovative curriculum design linking the issue of disciplines (subject of discipline areas) to a set of digital literacy skills, through three major goals: *engaged thinker*, *ethical citizen entrepreneurial spirit*, as we can see in the vision statement preparing citizens from Alberta for the year of 2030 (Alberta Education, 2010):

> "I am resilient and adaptable, and have the ability and determination to transform my discoveries into products or services that benefit my community and by extension, the world. I have the confidence to take risks and make bold decisions in the face of adversity, recognizing that to hold back is to be held back. I have the courage to dream" (Alberta, 2010, p. 20).

In the Tapia & Ferreira studies (2011) we also have a model for the development of entrepreneurial skills, in a study conducted in Portugal, in which the methodology has focused on the practical experiences focused on people, in their motivations and interests, in problem solving, in which errors are not negative, but an opportunity for learning, cooperative work and volunteering. The authors characterise the development of skills happens through projects in which participants promote the goals, plan, implement and evaluate, as they are evaluated according to their internal and acquired behaviors, action, mobilization and interests. Engaging with these concepts we can understand the individual entrepreneur as the one who has the ability to associate with members of a community to organize around and problem solving.

So, grounded in the concepts of Alberta Education (2010; 2011), Unesco (2013), Dolabela (2003) and Delors (1996), among others, we understand that entrepreneurship education is something capable of generating new knowledge accumulated in the history of life of individuals, preparing them for the challenges of the 21st century, to the idea of lifelong education, lifelong learning, which should be based on four pillars, according to UNESCO recommendations: learning to know, learning to do, learning to live together (learning to live with others) and learning to be (Dellors, 1996).

Thus, in the Colearns21 group research, that developed the matrix C (Okada et al., 2013) about the key competences for the 21st century, in interaction with the studies on entrepreneurship education with DICT, we developed the ground to approach the skills for entrepreneur through action-research methodology, in the reflective cycle on digital entrepreneurship projects, involving young people, researchers, teachers and experts in entrepreneurship education, all acting as co-learners and co-researchers.

## 3. Methodology

The research was developed through an exploratory study, through action-research, in which the reearcher are not only an observer but also a contributor in the formation. The study began with the invitation sent by email to the students and teachers of the Project Agentes Digitais in Brasil and in Portugal, so that as "co-learners" to develop research activities together they could become co-researchers in the project. Thirteen participants responded favorably to the "Agentes Digitais" project, and they took over a two months debating online, on the platform WeSpot - "Working Environment with Social Personal and Open Technologies for Inquiry based Learning –", biulding a community of practice and research on the experience of development of the Project "Agentes Digitais" and, on the importance of the Network for an entrepreneurial education.

As a tool for discussion and data collection the forum in the WeSpot environment (ELGG Platform). The platform was configured as a space for co-research, with gathering open question proposed, by the forum moderator, that, according to the interactions of the participants, triggered other questions that helped to support the concept of Entrepreneur in Network, which started to be called Co-entrepreneurship.

The initial question presented was:

> "Why is it important to entrepreneur collaboratively on the Network?
>
> In this space we will be discussing the skills mobilized to undertake the project and the importance of collaborative work (teamwork) and also reflect if it's just local or global, and in what time the network can be wider "(WeSpot, 2014).

The study was developed in two steps: first, at the opening of the collaborative environment followed by the interaction process among participants, and the second in a Web conference in which participants were asked to reflect on the skills in a synchronous discussion that lasted 2 hours, involving 10 participants and 3 external experts. We call this second step *online focus group* once it corresponded qualitative technique to involve individuals from different areas to reflect on an issue of common interest (Abreu, Baldanza & Gondim, 2009).

In the data analysis we sought to cross category analysis of the matrix of competencies to entrepreneur by analysing the content of the forum posts, the discovery of meaningful evidence in the reports of forum posts, content encoding and interpreting meanings (Bardin, 1977).

## 4. Results

### 4.1 WeSPOT Analysis

The use of WeSPOT environment (space - Questions), worked as a debate forum where , asynchronously, participants focused their experiences, shared links, theoretically reflected on the concept of co-entrepreneurship, and commented on the characteristics of young people to develop the Project Agentes Digitais. In this action there were 13 participants (students and teachers) from the Project Agentes Digitais, in Brasil (Fortaleza) and in Portugal (Braga), acting as co-learners in order to develop the research activities and, together, they could share experiences, becoming, co-researchers (Okada, 2013). In contente analysis we call participants "co-learners" because, in fact, with the communication, there never was the dichotomous relationship or even complementary "student versus teacher", all the participants acted in a symmetrical relationship based on equality, to discuss an object/subject that was common knowledge (the development of the Project Agentes Digitais). In other words, the watzlawickinian principle of symmetrical communication Exchange was met, with the orientation of the democratic ideal that the forum participants have equal opportunity to initiate and sustain communication (Silva & Ferreira, 2009, p. 5792).

The debate on the forum (WeSPOT) generated 49 posts, in a total of 9.189 words, that corresponds 187,5 words a post. The shorter post had 24 words and the longest, 959. On the communication movements generated according to the classification of Silva & Ferreira (2009), they were mainly formed by Reaction (25) and Answer (23), where participants evaluated, modified and expanded the concepts of entrepreneurship and to entrepreneur in the network shown in the movement of Structuring (12), there also were 16 movements of Request (questions). Also worth noting that apart from the text posts, there was other material resources with diverse language (multiliteracy) like videos, Conceptual maps, links to external sites of projects and experiences of entrepreneurial education with ICT.

Understandably, there has been an intense debate during the interaction, as shown by the array of different interactions, with no loose nodes.
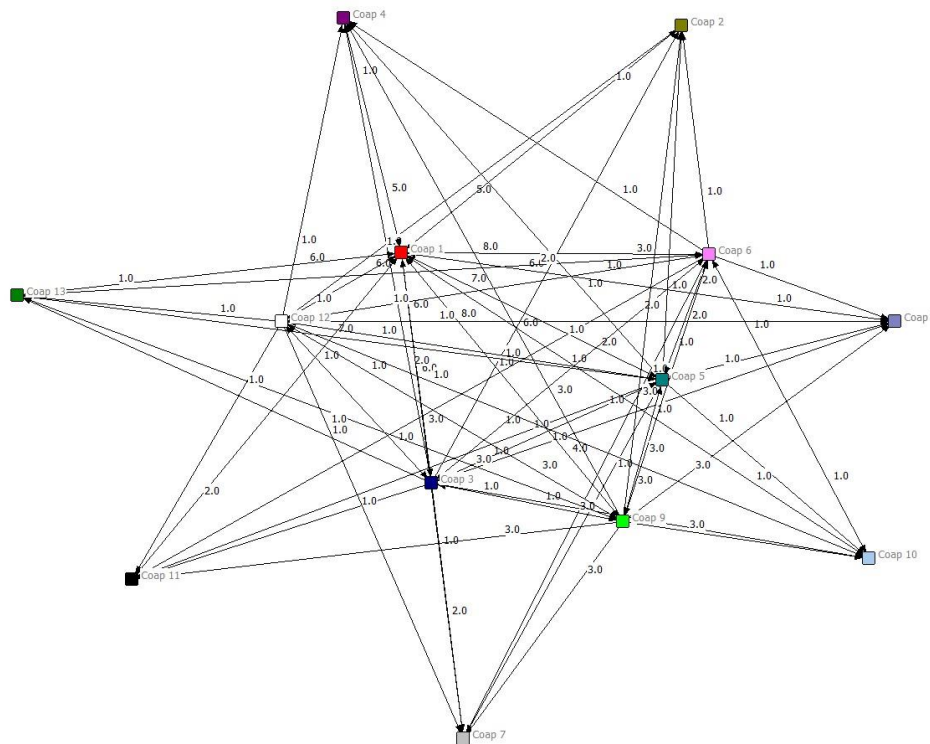
Figure 1 – Forum interactions Matrix

So, using as reference the dimensions of the skill Entrepreneur on Matrix C (Okada et. al., 2014) and rethinking DICT as an element of transformation, based on the development of projects by the young people, we present some evidence of the speech indicated on forum.

About the Entrepreneur in Network, in this digital age, a testimonial from one of co-learners signals that it is *make better decisions, more creative, risking consciously, leading, working effectively in teams, networking, in network, if so required.* (project cutting – co-learner 1WeSPOT)

To understand this network of ideas, we must learn to look and think "outside the box" as highlights another co-learner:

> *how important is [encourage] class after class creativity of the students and let them solve real and challenging problems. That's why I like developing projects with my students.*

(project cutting – co-learner 2 WeSPOT)

Self-evaluation is also one of the evidenced skills:

> *"we learn how to be more dynamic and creative, since before the implementation of these projects it had not been possible to present such characteristics in our school careers."*

(project cutting – co-learner 3 WeSPOT).

To consolidate the process of co-research on the forum, where the concept of Co-entrepreneurship has emerged, a Flash Meeting (videoconference) was performed to expand the discussion on skills necessary to entrepreneur in network. This Webconference also sought to address one of the challenges proposed by a co-learner on the forum:

> *"Who knows, we can convince ourselves together (win together) that the phenomenon of collaboration when associated with entrepreneurship is an important mechanism for our new social, political, cultural, environmental and institutional demands!"*

(project cutting – co-learner 5 WeSPOT).

### 4.2 Analysis of the focus group on the Webconference

The analysis of the focus group, through a Webconference (http://fm.ea-tel.eu/fm/75bcf0-36702), had the representativeness of the agents of the project developed in Brazil and Portugal, who were reunited in a collaborative environment that enabled the process of reflection on the concept of co-entrepreneurship. As the responsible for the project was in the Open University (London / England) to undertake a PhD internship related to the theme, the epicenter of the debate took place from that University, and also involved the stage advisor (Professor Alexandra Okada). Three judges, in  collaborative action research evaluation of processes and concepts also joined the discussion. The Webconference was held on March 22 (a Saturday), lasted two hours, with prior care to ensure the best day of the week for synchronous availability, and a time that met the time difference between countries. So, in Portugal and the UK the conference happened between 2 and 4 p.m., which corresponded in Brazil 10 and 12 a.m. This sharing of places between the 2 continents and 3 countries (in Portugal, there were participants who were in different places as Braga, Porto and Penafiel, in England, participants were in Milton Keynes, in Brazil, they were in different cities as Fortaleza, São Paulo and São Francisco do Sul/RS) also refers to the potential of current DICT in providing ubiquitous communication of excellent quality (Santaella, 2013). Worth noting that besides the participants image viewing, speech (voice) and writing (chat), there were sharing of material as a text summary, understanding the ideas forum, a Conceptual map allowing manipulation (interaction) by any of the participants, as well as the preparation of a Conceptual map

of the dynamics in Web Conference. This statement says well the impact that ubiquitous communication can have in the educational processes.

The meeting was conducted as a participatory orchestra in which the conductors (Karine Souza, Alexandra Okada and Bento Silva) previously prepared dynamics material in order to promote interactive process so that co-learners/co-researchers feel challenged to conceptualize co-entrepreneurship.

The meeting began with the launch of the challenge to share words / verbs representing the concept of Entrepreneurship and Entrepreneur in Network, and the debate was growing through speech (and writing) of each participant to realise what was meant on the importance of skills to entrepreneur in network. We highlight, among the most noted, the following actions: cooperate, add value, share, change, collaborate, learn, network, innovate, participate in social practices, creative work with digital technology . Content analysis of written messages in the form of a word cloud created by a participant during the debate highlights the importance of these actions to Co-entrepreneurship.
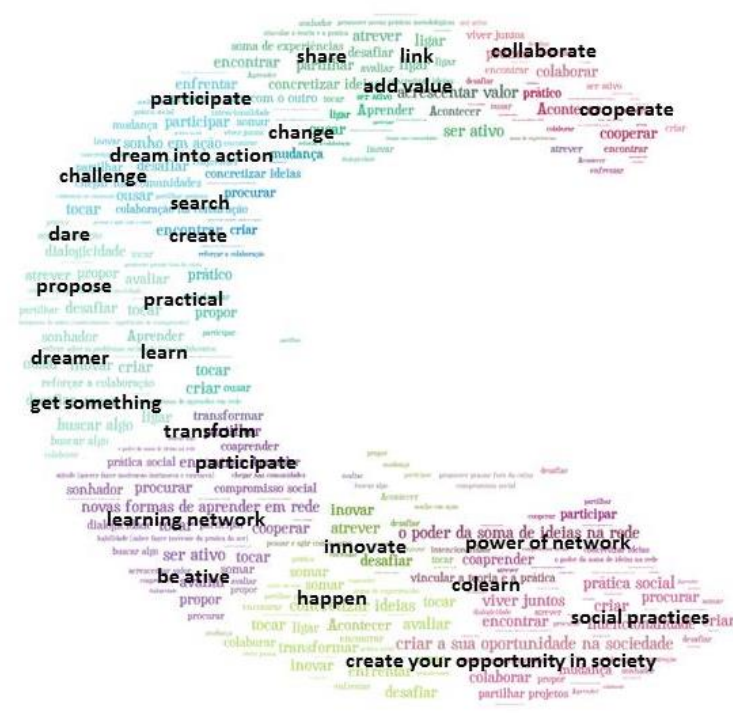


Figure 2 – Word cloud created based on the Webconference

The final strategy of consolidating the debate was the map developed collaboratively among

the co-researchers. By enabling the visualization of ideas generated (with links, concepts and questions), besides reinforcing the importance of the debate, demonstrates the meaning of the concept of **co-entrepreneurship** in a collaborative process of using digital technology as a social and educational practice.
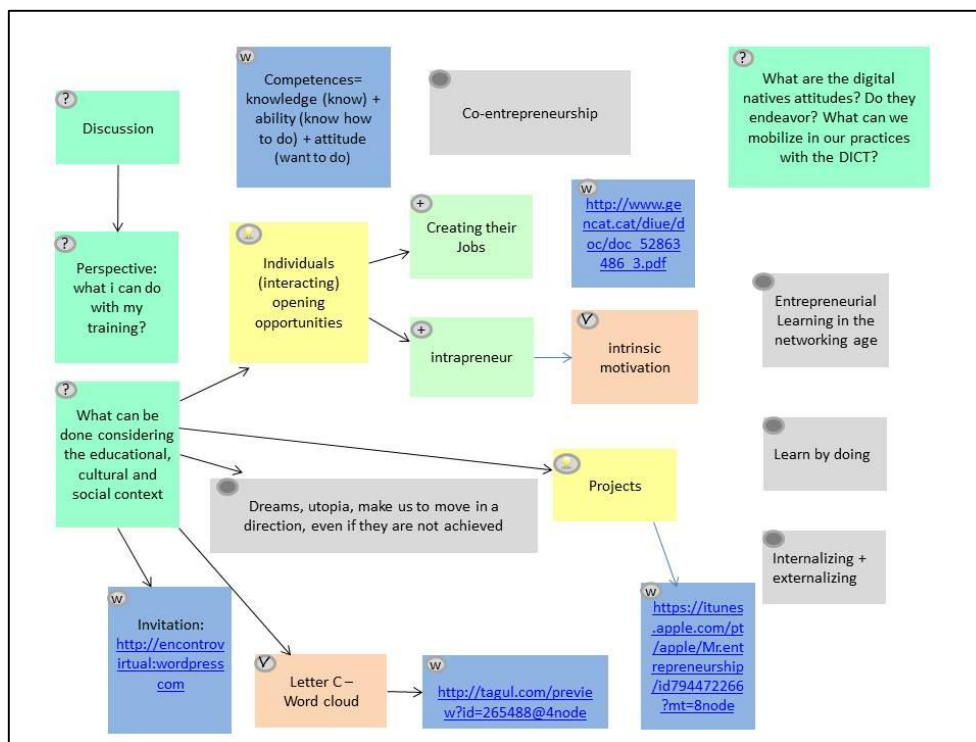


**Figure 3 – Idea map about co-entrepreneurship**

## 5. Final Remarks

This action research has gained strength in Online Collaborative Networks (Forum and Webconference), allowing all agents, regardless of locations, collaborate, and co-reflect and co-reserach. By acting networked on the construction of the concept co-entrepreneurship, the need for an entrepreneurial action mobilizing projects, liberating from passivity, which allows people to channel their wisdom with co-participation in the Network was validated.

To analyse the skills of co-entrepreneurship, the changes in the use of DICT must be understood in all areas of digital literacy, from the instrumental use (technical) the communicative, interactive and creative power of networking, and entrepreneurship should always be connected to creative thinking and ethical ideals of citizenship, fundamental principle of entrepreneurial education. Thus, a perspective of entrepreneurial education, DICT should be designed and used as social practices towards the development of people and communities

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