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SOCIAL REPRESENTATIONS OF ENTREPRENEURSHIP: THE ROLE OF TRAINING IN THE ACQUISITION OF ENTREPRENEURIAL SKILLS

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ABSTRACT

Objectives: To assess the change in the social representation structure of entrepreneurship in Portuguese students after training sessions in entrepreneurship. **Method**: An exploratory research was conducted, based on the structural approach of the theory of social representations. A group of 4th-year undergraduate nursing students of a Portuguese nursing school participated in this study: 192 in the pre-intervention phase and 139 in the post-intervention phase (N=331 participants). Social representations of entrepreneurship were assessed through the technique of free association in the pre- and post-test (before and after the 14-hour training). **Results**: A total of 1200 evocations with 169 different words and an overall mean order of 2.62 were obtained. The arrangement of data into four quadrants in the pre- and post-test found no change in the structure of representations in terms of the core components. However, a higher variability and dispersion of corpus was observed after the training period, which reflects a higher cognitive complexity and awareness for entrepreneurship/ to acquire entrepreneurial skills. **Conclusions**: The intervention showed a consistency between the central themes of entrepreneurship and its representation structure. It proved to contribute to a process of entrepreneurship change, although it requires a longer and more intense intervention.

Descriptors: entrepreneurship; entrepreneurial skills; social representations; training.

INTRODUCTION

The word entrepreneur originates from the French word "*entrepreneur*" and dates back to the 12th century. According to Lobato and Carmo (2009), it was used to describe a person who incited fights. The word literally meant "the intermediary", referring to the person who was in-between the manufacturer and the market facilitating the process of exchange. Later, in the 18th century, the word started being used in the business area. The economists Cantillon and Jean-Baptiste Say, in 1755 and 1803 respectively, "began using the term entrepreneur to describe someone who identified business opportunities and took risks to achieve them, someone who innovated and was an agent of change" (Lobato & Carmo, 2009, p. 84).

However, the need for economic growth and social development have created the need for specific training to intervene in this area, thus encouraging the implementation of courses initially offered at Administration Schools. The first initiative occurred in 1947, in the United States, and aimed at qualifying former Second World War soldiers to enter the

labor market. However, it was only in the 1970s that universities and business schools started to increase entrepreneurship training in their curricula. Its final expansion in education took place in the 1980s as a result of gaps in management education/training. The results soon started to emerge. In the USA, 350,000 fast-growing firms created two--thirds of all new jobs between 1993 and 1996, with entrepreneurship providing a positive contribution to economic growth. In addition, countries exhibiting higher entrepreneurial activity rates also tended to experience lower levels of unemployment (Audretsch, 2002). Hence, entrepreneurs are the drivers of the market economy, creating the necessary conditions to provide societies with wealth, jobs and diversity of choice for consumers. Thus, entrepreneurship has been considered essential to create value and is seen as a powerful driver of economic and social development (Kuratko, 2005; Minniti & Bygrave, 2004; Urbano, Aponte, & Toledano, 2008). Nowadays, it is also valued as a field in which opportunities to create future goods and services are discovered, evaluated and exploited (Shane & Venkataraman, 2000).

The academy has not distanced itself from this purpose; rather, it has invested in the development of entrepreneurial skills in students, thus contributing to the growth and development of society in general. In recent years, the academy has been asserting itself as an "Entrepreneurial University" by incorporating social and economic development as part of its mission. However, despite the need for entrepreneurship being consensual and the fact that some studies highlight that education/training in higher education institutions is determinant for the development of entrepreneurial skills, with positive effects of entrepreneurship training on the development of those skills (McMullan & Gillin, 2001; Katz, 2003; Kuratko, 2005), from a different perspective, other authors point out to limited, and even contradictory, effects of education on entrepreneurship (Collins, Hanges, & Locke, 2004; Davidsson & Honig, 2003; Ertuna & Gurel, 2011; Goedhuys & Sleuwaegen, 2000; Guerrero, Rialp, & Urbano, 2008; Gurel,Altinay, & Daniele, 2010; Thompson, Jones--Evans, & Kwong, 2010; Wu & Wu, 2008). Some authors even argue that the impact of education is not linear, a reason why Peterman and Kennedy (2003) advise caution in the interpretation of results on the impact of training on entrepreneurship and entrepreneurial behavior. The controversy around this issue is relevant in so far as training an entrepreneur is not simply to empower him/her with entrepreneurial skills or work on the cognitive domain; in fact, his/her affective, social and personal domains also need to be worked on. Some of these dimensions can only be acquired in real life experiences, through successes and failures. This issue has already been raised by Parreira, Pereira and Brito (2011).

Despite the variety of dimensions under analysis, it is important to understand how the cognitive dimension is assimilated by entrepreneurship students and the changes that they are able to perform in the rational domain in the event of attending training sessions. This is true particularly in the nursing area, where students acquire great autonomy and nurses may become agents of change, which allows them to become self-employed business people and contribute to the growth and development of society. This study acquires even more relevance in the sense that it may contribute to modeling educational processes in the entrepreneurship area, allowing for adjustments in key areas for the acquisition of entrepreneurial skills. A way to understand how people acquire these skills may be through the major themes circulating in society, which social representations help us identify and belong to the central core of a given representation and/or of its structure and peripheral system (Abric, 1994a, 1994b). The main purpose of this study was to identify the social representation of a training process in entrepreneurship.

Literature Review

An analysis focused on the Social Representations approach

The study of social representations began with Serge Moscovici and the *Grand theory* of social representations (Sá, 1996), when he clearly differentiated the static dimension from Durkheim's representation, showing that, when it comes to people, representations are social and, therefore, dynamic. Social representations derive from practices operating in the societies and in the cultures sustaining them. They are socially produced knowledge systems that guide behavior and intervene in the individual and social identity, creating conditions for constructing the object (Jodelet, 1989). They are composed of beliefs, information, opinions, and attitudes (Oliveira et al., 2008).

According to Oliveira, "*Representation is not a mere reflection of reality, but a significant organization that simultaneously depends on contingent factors, such as nature and difficulties posed by the situation, immediate context, purpose of the situation, and more general factors that surpass the situation itself* (...)" (Oliveira, et al., 2000:5). These social representation phenomena are multifaceted, diffuse, constantly changing and reflected in social practices and individual thoughts.

The Theory of Social Representations was adopted in our study within the context of social psychology (Moscovici, 1976; Jodelet, 1989). However, our approach emphasized the cognitive-structural dimension of representations, as proposed by Jean-Abric (1994a), based on the central core theory. It is, therefore, a complementary approach to the theory elaborated by Moscovici in 1961.

While addressing the cognitive content of representations and, therefore, valuing how a certain group organizes and structures the phenomenon under study, this approach allows understanding its core components and its peripheral system.

Abric's theory (1994a, 1994b) reconciles structuring and dynamism in an articulated whole, assigning a global meaning to the central core based on the major themes of society and organizing peripheral components. The cognitive components of the central core are stable/ consensual/ rigid, contrasting with the changeable/ flexible/ individualized nature of peripheral components. These are the components that provide for the maintenance of the interface with the situations and practices of a specific group in relation to a given object of study. This central core theory has the virtuosity of highlighting the transformation and comparison of the representations, where the different changes in the central core and peripheral system as a result of different interventions undergone by certain groups may, therefore, be highlighted. Visualizing the different developments and final states obtained in the reorganization of the different components, either central or peripheral, may dictate the success of a particular intervention, namely in education, as it allows identifying the changes enabled by the peripheral system and understanding what remains stable from the various cultures influencing a given society and what may require other pedagogical methods and more time to assimilate the changes.

To this end, the following objectives were set out:

1. To describe the content and structure of the social representations of entrepreneurship among Portuguese students, before and after educational interventions;

2. To assess the change in the structure of the social representation of entrepreneurship in students after a training period in entrepreneurship.

METHOD

Qualitative research based on the structural approach to the Theory of Social Representations conducted at a higher education institution in Portugal (Coimbra).

Subjects

A population of final-year (4th year) undergraduate nursing students in Portugal (from the Nursing School of Coimbra) was analyzed in two moments: before they received training in entrepreneurship (March, 2014) and after the educational intervention (May, 2014). The sample consisted of 192 students in the first moment and 139 in the second moment. The eligibility criteria were being final-year nursing students and being present during data collection.

Instrument

The data collection instrument consisted of three steps: socio-demographic characterization, free evocation of words starting with an inductive word, and additional information. The data collection process was conducted within the education institution on an individual basis, without information sharing.

Participants were asked to answer the following question: "Write down the first five words or expressions that come to your mind when you read the word –Entrepreneurship". The free association technique was used (Oliveira et al., 2005). Participants were also asked to provide socio-demographic information relating to their age, gender and student status.

Procedures and ethical issues

Data were collected in March, 2014, and six weeks later, i.e. "before" and "after" the training sessions in entrepreneurship.

As for the ethical issues, the study is part of a research project entitled "Nursing and entrepreneurship: profile of competencies of students and nurses of the Nursing College", which was submitted for ethical review to the Federal University of Juiz de Fora/Rio de Janeiro - Brazil in 2013, with the number 337152.

Participants expressed their acceptance to participate in the study by signing an Informed Consent Form.

Entrepreneurship Training Program

The 14-hour entrepreneurship training program was developed over the course of seven weeks within the scope of a course unit of integration into professional life for 4th-year students of the undergraduate degree in Nursing, with a view to preparing them for the job market.

In the entrepreneurship training program, a total of 8 contact hours were spent on the theme of Entrepreneurship and 6 hours of student work were spent on developing a business plan, including a market analysis study.

From a theoretical point of view, general aspects about entrepreneurship, the reasons to become an entrepreneur and the entrepreneurs' characteristics were discussed. Then, the sources of new ideas, the differences between idea and opportunity, and how an opportunity should be addressed were explored. The phases of the entrepreneurial process, from idea to business, were also discussed. In terms of group dynamics, brainstorming and the Scamper method were used to generate ideas. Groups of students identify ideas and opportunities, conduct a SWOT analysis, validate the opportunities identified through the

market study, and analyze the internal and external Environments through the PESTE analysis (P-Political; E-Economic; S-Social; T-Technological; E-Environmental). This process is described in a document entitled *Business Plan*. Finally, they used the elevator pitch to present their ideas, taking into account the characteristics, the sequence, the assessment and some aspects to be considered during the presentation.

Data analysis

Answers were analyzed through a specific software, using the techniques developed by Vèrges (1987-1994) and the EVOC and SIMI software (Vèrges, 1993), 2005 version.

In order to obtain the social representation of entrepreneurship, the evoked words were listed using the EVOC software, which analyzed them by crossing their frequency of evocation with their mean order of evocation. To identify and compare the structures of the representations, two *corpus* were created with the words evoked in both data collection moments, which were then analyzed using the 2005 EVOC software (Ensemble de Programmes Permettant L'Analyse des Evocations). This software calculates two indexes - a position index and a frequency index – which identify the importance of each word in the set of data collected. The intersection of those two criteria produced what Vergès (1993; 1994) called the Table of Four Houses or Table of Four Quadrants (Oliveira et al., 2005; Abric, 1994a, 1994b), in which the terms are classified according to their level of significance, allowing for the identification of a hypothesis of centrality of the term indicating the representation under study. In this table, the left upper quadrant includes the terms that are, probably, the central core of the representation under study. The words in the left lower quadrant are called contrast elements. Those in the right upper quadrant are the first peripheral elements, whereas the right lower quadrant includes the second peripheral elements, which are more flexible and external to the representation (Vergès, 1994; Abric, 1994a, 1994b).

Subsequently, whenever possible, the words were grouped based on a prototypical categorization, keeping the categories independent from each other, as according to Bardin (1995). In this technique, the group of evoked words was subject to a prototypical categorization that sought to maximize the use of the *corpus*. In this second phase and whenever possible, the category was selected according to the prototype of higher frequency, as recommended by Vergès (1993; 1994).

The similitude analysis technique was applied using the SIMI software to complement the analysis of the central core (Vergès, Barbry, Scano and Zeliger, 1997). This aimed at identifying the number of bonds or connections between the evoked words and displaying them on a graph tree. Such connections may be used as a second indicator for the potential presence of the elements in the central core of the representation.

Using the SIMI software (Vergès, *et al.* 1997), a similarity matrix was created from an engagement index that ranged between 0 and 1; however, for a better understanding of the analysis, it was multiplied by 100. The engagement index shows the extent to which categories are interrelated, that is, the extent to which one category is evoked at the same time as another category. An index of 100 means that a more fragile category is always evoked together with the strongest category. Later, based on the similarity matrix, a lexicographical analysis was performed using the maximal tree graph to compare the moments before and after the training sessions in entrepreneurship.

RESULTS

Socio-demographic characterization of the sample

Although data collection focused on the same respondents both before and after the training sessions in entrepreneurship, the students adhered more to the first moment than to the second one.

In the first moment, the sample consisted of 192 respondents with a mean age of 21.95 years and a SD of 1.91; 80.6% of participants were aged between 21 and 22 years, 89.1% were female, 97.4% were single, and 3.6% were working students. A total of 29% of respondents had a business idea, 90.7% of those ideas derived from market needs, 45.5% had no entrepreneur in their family, and 56.8% would like to create a business company.

In the second moment, the sample consisted of 139 respondents with a mean age of 22.33 years and a SD of 3.86; 74.6% of participants were aged between 21 and 22 years, 81.9% were female, 95% were single, and 5% were working students.

Analysis of Evocations

Starting with the inductive word proposed for the collection of evocations, i.e. "entrepreneurship", 1200 answers were identified in both moments, in a total of 169 different words. These were inserted into the database in the order in which they were evoked. The order of evocation of the answers was crossed with its frequency, thus obtaining a four-quadrant representation separated by the mean order of evocation and the frequency of evocation, showing the hypothetic central and peripheral elements of the representation structure.

Since we aim at analyzing the structure of the representation "before" and "after" the entrepreneurship training sessions, both representations will be presented in Table 1 and Table 2, respectively.

Table 1 shows the structure of the representation before the entrepreneurship training sessions. A total of 685 words were identified, in a total of 119 different words, with a mean order of evocation of 2.56.

Table 1- Social representation of Entrepreneurship in final-year Nursing students (before the training sessions in entrepreneurship). Coimbra, Portugal, 2014.

Order of Evoc. <=2.56 and f >=17	f	Mean Order of Evoc.	Order of Evoc. >2.56 and f >=17	f	Mean Order of Evoc.
Innovation	146	1.815	Opportunity	27	2.519
Creativity	87	2.391	Investment	23	2.696
Idea	30	2.467	Work	17	2.519
Business	28	2.179			
Initiative	13	2.000	Dynamism	11	2.727
Creation	12	1.667	Evolution	10	4.300
Project	9	2.111	Novelty	9	2.778
Management	7	2.143	Research	9	2.889
Originality	5	2.000	Discovery	7	2.571
Development	5	2.000	Employment	7	2.571
			Company	7	3.571
			Entrepreneur	6	2.500
			Proactivity	6	2.500
			Taking a risk	6	2.667
			Challenge	6	2.667
			Future	6	3.167
			Commitment	6	3.667
			Activity	5	2.600
			Autonomy	5	3.000
			Improvement	5	3.200
			Organization	5	4.000

Table 2 shows the structure of the representation after the training sessions in entrepreneurship through the table of four houses. A total of 516 words were identified, in a total of 112 different words, with a mean order of evocation of 2.67.

Table 2- Social representation of Entrepreneurship after the training sessions in entrepreneurship

Order of Evoc. <=2.67 and f >=13	f	Mean Order of Evoc.	Order of Evoc. >2.67 and f >=13	f	Mean Order of Evoc.
Innovation	98	1.724	Opportunity	19	3.053
Creativity	48	2.083	Investment	13	3.462
Business	33	2.364			
Idea	28	2.286			
Creation	10	2.200	Work	10	3.200
Initiative	5	2.600	Future	9	3.200
Novelty	5	2.200	Plan	9	3.222
			Team	9	3.444
			Employment	8	2.750
			Dynamism	8	2.875
			Project	8	3.500
			Ambition	7	3.286
			Challenge	7	3.429
			Improvement	6	2.833
			Planning	6	3.167
			Product	6	3.833
			Originality	5	2.800
			Persistence	5	3.000
			Taking a risk	5	3.200
			Search	4	2.750
			Need	4	2.750
			Management	4	3.000
			Commitment	4	3.250
			Effort	4	3.500
			Autonomy	4	3.750
			Organization	4	4.000

Overall, despite some minor changes, stability was found in the central core and the first and second peripheries of the peripheral system. As shown in table 1, the students' representation of entrepreneurship "before" the training sessions on entrepreneurship suggested a central core organized around **innovation**, **creativity**, **idea**, and **business**, these being the core concepts. The first periphery included concepts that supported this central core, thus creating the necessary conditions to undertake, such as **opportunity**, **investment**, and **work**. The second periphery also included concepts such as **dynamism**, **evolution**, **novelty**, **research**, **discovery**, **taking a risk**, and **challenge**, which embodied the concept involving the act of undertaking and company. A small number of participants considered "**initiative**, **creation**, **project**, **management**, **originality** and **development**" as core concepts of entrepreneurship. In general, students seemed to be aware of the concept, conveying

an idea of entrepreneurship based on creativity and innovation, with cues to its organizational clarification, i.e., how to use such creativity to create innovative ideas and explore opportunities through work and investment.

As shown in table 2, the students' representation of entrepreneurship "after" the training sessions in entrepreneurship suggested the stabilization of the central core organized around the same themes - **innovation**, **creativity**, **idea** and **business**. These were involved in aspects such as **opportunity** and **investment** in the first periphery of a peripheral system embodying the central core elements. The second periphery also pointed out to the need to consider aspects such as **work**, **plan**, **dynamism**, **project**, **ambition**, **challenge**, **commitment**, **effort** and **organization**, which were in line with the act of undertaking. Elements such as **creation**, **initiative** and **novelty** were referred to by a minority group contrasting with the central core elements.

The results show similar central and peripheral cores in both structures ("before" and "after" the training sessions in entrepreneurship). Two representation systems will be different if their central cores have significantly different compositions. In this way, results seem to show no significant changes in structure after the training in entrepreneurship.

Due to changes in the mean order of words and aiming at analyzing the cognitive structure in both moments, we conducted a prototypical categorization of the evocations to build a similarity matrix that enabled us to generate the maximal tree graph of the lexicographic analysis. The categorization allowed us to create 22 categories using 98.7% of the corpus, as shown in table 3.

Table 3 - Prototypical categorization of entrepreneurship and its structure

No.	Category	No. words	Evocations	No.	Category	No. words	Evocations
1	Innovation	4 (2.4%)	273 (22.8%)	13	Skill	18 (10.7%)	38 (3.2%)
2	Creativity	4 (2.4%)	161 (13.4%)	14	Entrepreneur	8 (4.7%)	38 (3.2%)
3	Opportunity	11(6.5%)	83 (6.9%)	15	Work	2(1.2%)	28 (2.3%)
4	Dynamism	14 (8.3%)	73 (6.1%)	16	Success	8(4.7%)	21 (1.8%)
5	Business	7(4.1%)	72 (6.0%)	17	Employment	1 (0.6%)	15 (1.3%)
6	Management	12 (7.1%)	71 (5.9%)	18	Company	2 (1.2%)	13 (1.1%)
7	Idea	3 (1.8%)	67 (5.6%)	19	Research	2 (1.2%)	11 (0.9%)
8	Motivation	19(11.2%)	49 (4.1%)	20	Marketing	4(2.4%)	11 (0.9%)
9	Investment	4(2.4%)	47 (3.9%)	21	Organization	3(1.8%)	11 (0.9%)
10	Investment	4(2.4%)	47 (3.9%)	22	Vision	6(3.6%)	10 (0.8%)
11	Personality	13(7.7%)	44 (3.7%)	23	Profit	2(1.2%)	8 (0.7%)
12	Taking a risk	8 (4.7%)	40 (3.3%)	24	No category	14 (8.3%)	16 (1.3%)

The analysis shows that the most commonly mentioned categories are: **innovation**, **creativity**, **opportunity**, and **business**. The categories with the highest number of different words are: **motivation**, **skill**, **dynamism**, **personality**, **management**, and **opportunity**.

Based on the prototypical categorization, the maximal trees below were created. They highlight two different structures: figure 1 shows the maximal tree of the prototypical categorization "before" the training sessions in entrepreneurship, whereas figure 2 shows the maximal tree of the prototypical categorization "after" the training sessions in entrepreneurship.

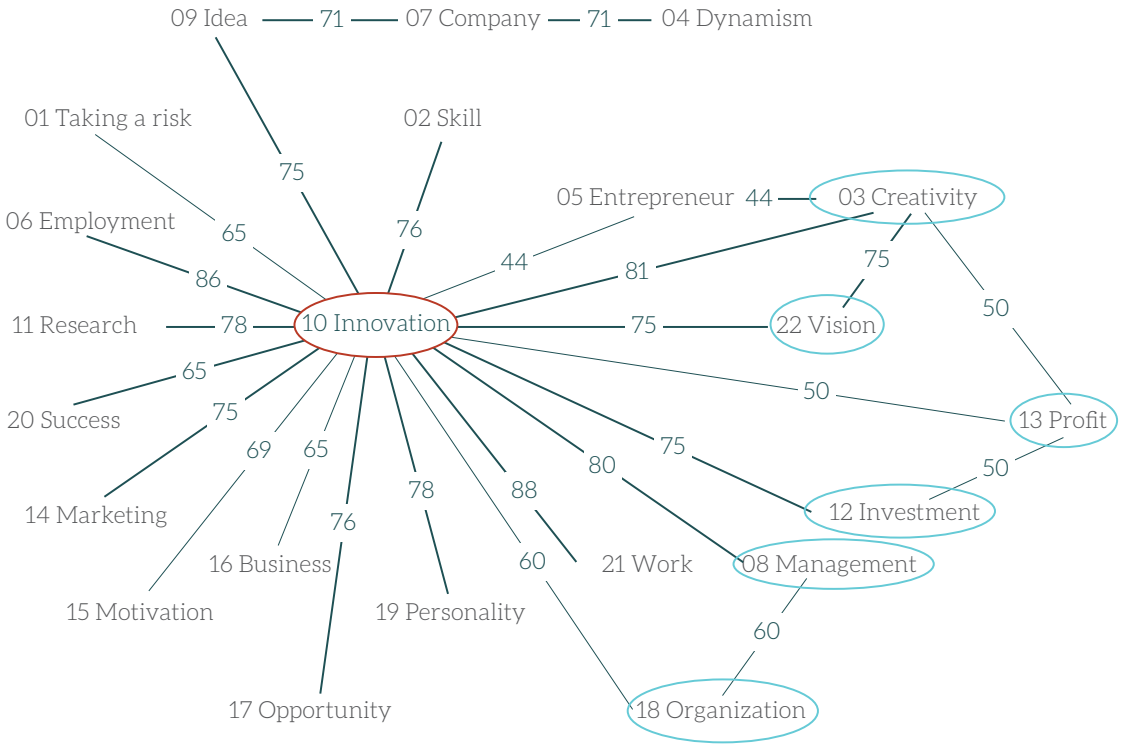

Figure 1 - Maximal tree of the categories "before" the training sessions in entrepreneurship. Coimbra, Portugal, 2014.

The lexicographic analysis in figure 1 shows that "**Innovation**" is central to the cognitive structure and organized around a series of categories. We highlight the triangle formations that relate **innovation**, **vision** and **creativity** to generate profit. We also underline the presence of a triangle structure that associates **innovation**, **investment** and **profit**, and, finally, a structure that associates **innovation**, **management** and **organization**. However, these relationships indicate an organizational dispersion of concepts, without clarifying paths to undertake.

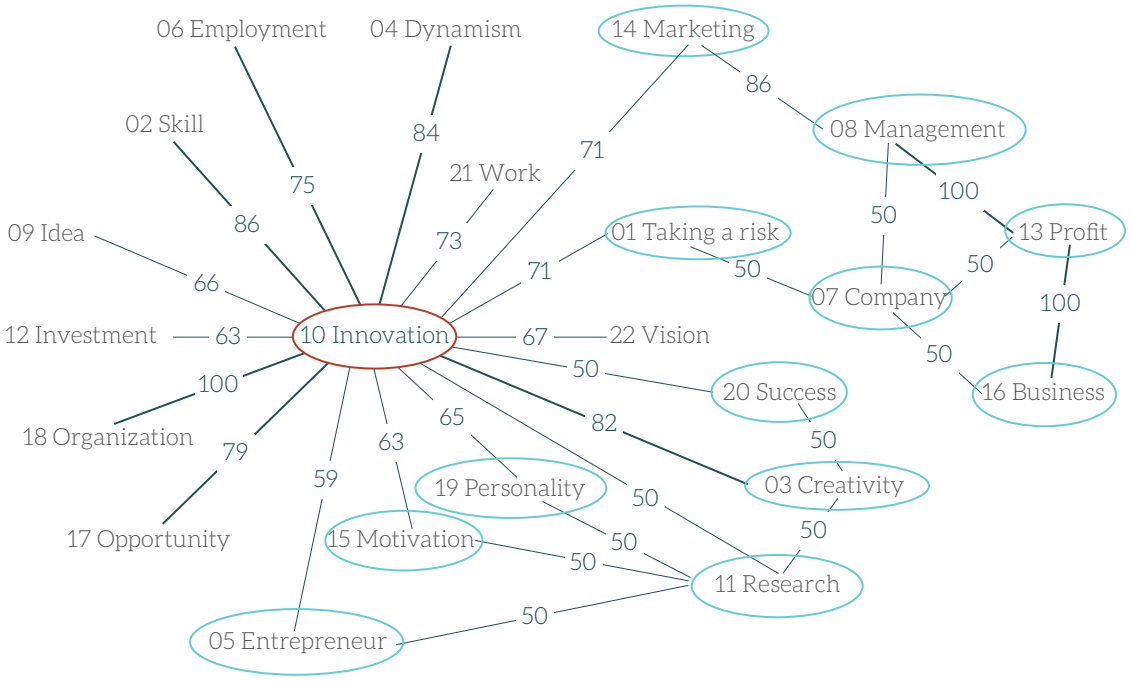

Figure 2 - Maximal tree of categories "after" the training sessions in entrepreneurship. Coimbra, Portugal, 2014.

The lexicographic analysis in figure 2 referring to the prototypical categorization "after" the training sessions in entrepreneurship highlights the fact that **innovation** continues to be central to the cognitive structure, although some changes were observed. Thus, **innovation**, **research** and **creativity** seem to be associated with **success**. The associations between **personality**, **motivation** and **undertaking** with both **research** and **creativity** were considered necessary to achieve success. The need to **take risks** to "**create companies** and **businesses**" and generate **profit** was also highlighted. **Research** emerges as a way of channeling "**creativity** to **innovate** and **succeed**". **Motivation** gives the motto for students to feel the need and desire to undertake, an area in which **personality** plays an important role, being proactively mobilized for a meaningful cause – to investigate to solve a problem and succeed.

DISCUSSION AND CONCLUSIONS

The results of this study indicated stabilization in both structures of representations. The representation structure "before" the training sessions in entrepreneurship had a robust central core where structuring elements for entrepreneurship were highlighted. The representation structure "after" the training sessions in entrepreneurship maintained the elements of the central core. A change in the representation structure was, therefore, not evident. Various elements of entrepreneurship were identified, with innovation, creativity,

idea and business being considered its core components, involved in a peripheral system that advocates the need for investment and search for opportunities. Nevertheless, the fact that the concept "work" moved from the first to the second periphery should be highlighted.

However, the prototypical categorization highlights a richer and more organized structuring by the students after the training sessions in entrepreneurship. This structure is more in line with the concepts of entrepreneurship, from idea to business, where a path to success is visible. Concepts such as dynamism, research, discovery, proactivity, taking a risk, challenge, commitment, ambition, investment, and challenge emerge in a second periphery and, therefore, it is necessary to invest even more in training, thus stimulating the need for determination to undertake.

In any case, a consistency in the formative and learning processes is observed, which is consistent with the dimensions of important concepts to undertake. Positive attitudes emerge that guide this representation structure, in line with the development of core competencies to undertake.

The content of the representation reflects a curricular adequacy, although the acquisition of new core skills to undertake was not clear. However, the organized whole is far more complex, as evidenced by the lexicographic trees (before and after entrepreneurship training sessions). We can hypothesize that these students' perception of entrepreneurship, although its central core is stable, is in a process of transformation given the changes in the second periphery. Thus, the following aspects stand out in the students' representation:

- The central core of the representation emphasizes the need to "create" based on the "idea", thus establishing the necessary conditions to "innovate and create businesses";
- Students are aware of the need to seek "opportunities", achieving this goal through "investment" while "searching for opportunities", thus supporting the central core themes;
- Even though it is in the second periphery, conducting "research" seems to be an important trigger of the "motivation" to "create, innovate and succeed" in which "personality" strongly intervenes, as may be seen in the lexicographic tree.

These results provide a significant contribution by underlining a consistency between the core themes of entrepreneurship and its representation structure. However, they do not confirm a specific impact of the training sessions in entrepreneurship on the acquisition of entrepreneurial skills, as mentioned by several authors in various research studies (Edwards & Muir, 2005; Fayolle, 2005; Urbano *et al.*, 2008). Still, the alignment between

the profile of required skills and the students' representation structure may be due to the participants' permanent contact with a culture that values the search for opportunities and risk-taking as part of the formative model and in line with the entrepreneurial culture. From the first to the final year of the Nursing undergraduate degree, students come into contact with various entrepreneurship-related activities, participate in entrepreneurship competitions, receive feedback on their various participations, and are encouraged to search for answers to solve problems, suggesting an alignment with a global formative process that values entrepreneurship. It is, therefore, a very strong stimulus that is not easily changed, especially not after only a 14-hour training period. It needs to last longer and be more intense.

As for possible reasons for the maintenance of the central core elements, the fact that the training process only included a small number of hours, thus not changing the representation structure, should be highlighted. In this regard, the proposal of the European Commission in 2006 stresses the need to increase investment in entrepreneurship through education, especially entrepreneurial education, as it may increase innovation and economic growth. Other studies also show that the increase in the number of years of entrepreneurship training is associated with the development of entrepreneurial skills (Oosterbeek, Praag, & IJsselstein, 2007; Van der Sluis and Van Praag, 2007). Thus, the European Commission reinforces the idea that these entrepreneurial skills can and should be taught.

Hence, students who are more proactive, more responsible, risk takers, with more peripheral vision, with greater social awareness, more focused on the patients' needs, and guided by humanistic values and ethical principles of excellence are also more attractive to the job market, given their greater capacity for change and adaptive skills. Education in entrepreneurship may, therefore, be the most interesting and effective way of making a transition to the job market (Matlay, 2005; Commission of the European Communities, 2006; Urbano *et al.*, 2008). However, our results are not conclusive on the impact of the training sessions on the acquisition of entrepreneurial skills. Although Peterman and Kennedy (2003) emphasize that formal education may decrease the entrepreneurial drive, reducing curiosity and increasing risk aversion, the same was not observed in our results. As it was expected, no changes were found in the central core and a core stable anchorage seems to exist in the major themes of entrepreneurship in the Portuguese society. However, if training continues and people learn from their experiences, the possibility exists for the representation to change as well as its peripheral systems, i.e. both the first and second peripheries.

This conceptual richness and variability evidenced in the categorization and similarity analysis highlights the importance of the training process to mobilize psychosocial/representational contents, thus creating a richer mind map, with greater cognitive complexity (also through the awareness of the object under study), translating into a more complex and coherent restructuring of the mind map to undertake. Thus, the results showed a social-cognitive mobilization and, considering that it is a rather well structured representation, its change would require more intense stimuli (both in duration and intensity).

In view of these results, we renew the importance of entrepreneurship training raised at the World Economic Forum in 2009, which highlighted the need to increase and professionalize training to learn how to become an entrepreneur, increasing the depth and rigor to ensure the high quality of entrepreneurship training, under penalty of the training process demotivate or even create an aversion to entrepreneurship.

In the same year, the Eurobarometer already stated that Portuguese students acknowledged the importance of the preparation provided by the education system in the area of entrepreneurship, with 51% of students wanting to be self-employed and showing a desire to undertake. Hence, it is also imperative to increase the duration and intensity of the training process in entrepreneurship in the nursing domain due to these professionals' need to cope with the complexity, uncertainty and unpredictability of healthcare environments. It is, thus, necessary to look for new ways to solve the users' problems, in particular through the creation of innovative clinical devices, new approaches to solve problems and cope with situations that require quick clinical judgments and the ability to make effective and efficient interventions. As a strategy to avoid a lack of motivation towards entrepreneurship among higher education students, it is recommended that entrepreneurial activities start immediately in the first year of the degree, either integrated in the curriculum or as an extra-curricular activity through the presentation of real-life situations. Extra-curricular activities may grant credits for the students' degrees (Parreira *et al.*, 2011). Therefore, a formative model should be developed early in life, thus transforming entrepreneurship into a naturally social and accepted process.

At a time of economic, political and social crisis, as well as crisis of values, of which entrepreneurship is part as a driver for the development of a given region or country, it will certainly be important to take advantage of this troubled period to create effective conditions for training, supporting and enhancing the creative potential of students wanting to become entrepreneurs. These students are the structural foundation and drivers of society, insofar as they can make it more competitive, sustainable, and a source of value. Hence, the academy plays a key role in the development of entrepreneurial skills and should,

therefore, include entrepreneurship in the curricula at all levels of education, creating the necessary conditions for students, through practice and monitoring, to develop a greater capacity to take risks. This path will have to be integrated into a national policy that supports entrepreneurship in all areas, included in governmental programs and accepted by society in general, making every effort to help entrepreneurs in the various sectors of activity.

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