

Validation of instruments to measure social entrepreneurship competence. The OpenSocialLab project

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Abstract—Education within universities should consider the promotion of training activities aimed at training people who are creative, innovative, enterprising and aware of their environment and needs. The purpose of this paper is to present the preliminary results of the piloting of three instruments for a methodological proposal aimed at measuring the level of mastery scaled by students of undergraduate and graduate courses, in terms of social entrepreneurship skills. Thus, the instruments were validated through various strategies such as expert judgement, non-participating observation, statistical validity and reliability. Furthermore, the piloting takes place within the framework of a mixed method, since the data collection instruments were the focus group, the questionnaire and the semi-structured interview. The sample participating in the validation was different, depending on the instrument piloted: focus group ($n = 5$), questionnaire ($n = 98$) and interview ($n = 4$). Finally, the contributions of this work can be of value in studying social entrepreneurship.

Keywords— social entrepreneurship, educational innovation, competence, students, measurement.

I. INTRODUCTION

Entrepreneurial training activities can be implemented in interdisciplinary environments [1], and at present, the transfer of university knowledge and technology represents a critical factor for economic [2] and social [3] development. Therefore, the development of competencies for entrepreneurship is crucial in the formation of future citizens and agents of change, and of special interest that entrepreneurship focused on solving social problems of high impact, that is, competencies related to involvement in social reality, awareness of the other, code and ethical sense. The latter fertilize the development of transversal competencies that every university requires to develop, regardless of its disciplinary area.

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Social entrepreneurship is an incipient field of study that is gaining consolidation. For their part, Martínez-Rivera and Rodríguez-Díaz [4] identify four differentiating aspects of entrepreneurship: (1) creative destruction (innovative products or services), (2) creation of value (resources from low productivity to high performance), (3) identification of opportunities (exploiting the opportunities that changes provide) and (4) ingenuity (taking advantage of opportunities and facing challenges due to lack of resources). For their part, Alegre, Kislenco, and Berbegal-Mirabent [5] state that it focuses on the combination of social and financial objectives, community ideals and innovation towards the exploitation of opportunities to generate value.

Specifically, with the realization of this project it is expected that at the end of the implementation of the project the students will escalate levels of mastery of the social entrepreneurship competence, reflected in an increase in their attitudes and behaviors of potential for social entrepreneurship. That is to say, in addition to the acquisition of knowledge, skills and attitudes of entrepreneurship, acquire and demonstrate the philosophical and ethical competencies of social entrepreneurship: code and ethical sense, awareness of the other, critical thinking and involvement in social reality. The results will reflect the collaborative work between students, teachers and external agents as social entrepreneurs.

II. THEORETICAL FRAMEWORK

A. Entrepreneurship competences

Entrepreneurial skills can be identified as transversal skills that can be developed within the university. They are not exclusive to any one discipline but are nourished by the knowledge of the various disciplines, as well as the personal experiences of each individual in relation to the challenges experienced in their context [6]. The development of these competencies occurs when the student makes use of his or her knowledge and integrates it into his or her work, life and being in order to solve a professional challenge that involves him or her and commits him or her as a generator of results.

When considering training for social entrepreneurship from education by competencies, it is worthwhile to rescue the components that integrate a competency in order to understand how it has been operationalized for this study. A competence includes three components: (1) conceptual component, acquired from scientific knowledge of a specific academic field, (2) procedural component, based on the development of practical skills to apply the acquired conceptual knowledge, (3) attitudinal component of learned values, rules and personal attributes [7]. Thus, entrepreneurial education should consider certain knowledge, skills and attitudes that students should develop.

When dealing with the subject of entrepreneurial education, it is worth identifying or conceptualizing where one wants to go, that is, it is not the same to talk about entrepreneurs as about an entrepreneurial individual. In this regard, the former considers entrepreneurship as the identification of opportunities, business development, self-employment, business creation, in other words, becoming an entrepreneur; the latter describes entrepreneurship with respect to personal development, creativity, self-sufficiency, initiative, action-oriented, in other words, being an entrepreneur [8]. From this point of view, we can consider where the training is going, which, in this case, is oriented by the second one.

In order to formulate training models in social entrepreneurship, as well as the generation of instruments to measure its development, it is necessary to establish an operationalization of the competence to be dealt with. In the field of entrepreneurial education there is already a certain consensus regarding the knowledge, skills and attitudes that characterize the entrepreneurial profile, however, in the field of social entrepreneurship studies are recent, and no general operationalization has been found. In this regard, we have found that the entrepreneurial competence integrates a series of cognitive (knowledge and skills) and non-cognitive (attitudes and values) competencies [9]. In this way we have a starting point for the study of social entrepreneurship competencies.

With respect to the above, entrepreneurship competencies can vary when talking about social entrepreneurship, so it is important to identify differentiating elements of (commercial) entrepreneurship and social entrepreneurship. Social entrepreneurship is defined as "an innovative and social value-creating activity that can occur within or across the government, business or non-profit sectors" [10, p. 2], commercial entrepreneurship seeks to generate wealth, while social entrepreneurship seeks to generate sustainable solutions to social problems. Therefore, evaluating social entrepreneurship is more complex, since it is not a question of evaluating economic income, but rather the social impact on communities or the environment, whether globally or locally.

It is from this differentiation that an operationalization of the competition can be established. To this end, we have started from the research of Sáenz-Bilbao & López-Vélez [11], in which they operationalize competition in four components:

- Skills related to the task or work to be done: innovation and creativity, vision and project (recognition of entrepreneurial opportunities), goal setting, decision making, planning and management, problem solving, time management

- Skills related to social relations: leadership, effective relationship skills, teamwork, communication, motivation, organization, delegation and people management.
- Philosophical and ethical competence: code and ethical sense, awareness of others, critical thinking, involvement in social reality.
- Competencies with respect to the development of personal skills: initiative and proactivity, autonomy, adaptability, tenacity and perseverance, self-confidence and positive mental attitude, locus of internal control and responsibility, mastery of stress and tolerance of uncertainty, ability to take risks.

Based on this operationalization, we have undertaken to investigate various studies that speak to this issue in order to formulate an operationalization of the competition in accordance with our project and research instrument. According to the literature review the operationalization for the construction of the instrument is the following:

- Leadership for social change: is the integration of motivation for social change, accompanied by skills for time management, people management, teamwork and effective communication, which integrates attitudes of perseverance, passion for entrepreneurship, persuasion and communication [11]-[15].
- Social innovation: It is the capacity to identify new opportunities in the face of social or environmental problems and to generate creative ideas for social transformation, through processes of self-learning, adaptability, with attitudes of tolerance to uncertainty and ambiguity [9], [11], [12], [14]-[16].
- Social / environmental value: these are the attitudes of social entrepreneurs that include empathy towards unmet needs, code and ethical sense, social implications, orientation towards sustainability and the assessment of social impacts [6], [11]-[15].
- Management: this is the knowledge and skill that all entrepreneurs need to master in order to manage and run an organization, and it has to do with managing limited resources, financing, business administration, market assessment and strategic development [9], [11]-[13].

B. Pedagogy for training in social entrepreneurship and university linkage

Teaching processes for entrepreneurship take place in active learning environments through collaborative, action-oriented activities, experiential learning, problem solving, project based, creativity and peer evaluation [17]. The same authors indicate that education for entrepreneurship comprises a process that provides students with the ability to recognize business opportunities and perspectives, self-esteem, knowledge and skills to act on these. In other words, creating spaces for creative and independent thinking, taking risks and assuming responsibility.

Within the literature it is proposed that the development of competencies for social entrepreneurship can occur in

experiential contexts, that is, where students experience experiential learning from their participation in linkage projects with organizations that seek to solve a problem of social interest. The innovation model of the quadruple helix represents a scenario in which the role of university members is crucial for the development of communities. The four-helix model sees the generation of shared value that benefits civil society, private initiative, academia and the public sector, so that an innovation ecosystem is generated [18]; generally, the literature on this model includes case studies.

Therefore, innovation activities in higher education institutions are increasingly oriented to the production of knowledge, not only its transmission, through academic entrepreneurship practices (research, knowledge and technology transfer). This brings with it new training and teaching needs in universities, where professors work in groups, not only with other professors, but with other sectors outside the institution [19].

Thus, this new perspective of linking the university allows the generation of experiential learning environments based on experience. This learning takes place when learning activities occur in contexts of active participation and experiences of real situations, in which students discover, try out solutions and interact with others [20]. Experiential learning communities have positive impacts on the formation of university students, both in the academic and social context [21]. Positive experiential learning establishes some conditions under which the learning experience occurs: reflection, critical analysis and synthesis, initiative, active participation, involving the intellectual, creative, emotional, social and physical side, experiencing success, failure, uncertainty and risk taking, promoting spontaneous learning opportunities, as well as problem posing by the teacher and the development of relationships throughout the experience.

This learning approach has its basis in the experiential learning cycle generated by Kolb [22]:

- (Concrete experience, momentum) Concrete experience: *concrete EC experience Engage fully and openly without bias in new experiences
- (Reflective experimentation, observation,) Observations and reflections *reflective observation RO. Reflect and observe your experiences from different perspectives.
- (Abstract experimentation, knowledge) Formation of abstract concepts and generalizations: *abstract concept formation AC. Create concepts that integrate their observations into logically sound theories
- (Active experimentation, judgment) Testing the implications of concepts in new situations: *Active experimentation AE. Use these theories to make decisions and solve problems.

III. METHODOLOGY

The methodological process is a mixed method [23], which is characterized by the collection of qualitative and quantitative data in order to better understand a research problem. Mixed methods are necessary in an academic world that has become interdisciplinary, complex and dynamic, so it is necessary for researchers to appropriate other methods to facilitate communication, promote collaborative work and provide superior research. The rationale (epistemology) does

not dictate which specific method (methodology) of data collection and analysis researchers should use [24]. The objective of this paper was to test the behavior of the quantitative and qualitative instruments for the development of the project.

A. Participants

For this pilot, there were different participants for each of the instruments. Social Entrepreneurship Competence Instruments (quantitative) 98 undergraduate students, on this occasion the objective is to identify the behavior of the items with respect to the previous profile of the students. The focus group and interviews (qualitative), which were analyzed through phenomenology, to understand the training in social entrepreneurship.

B. Instrumentss

- Social entrepreneurship instrument: this questionnaire served to identify the level of competence reported by the students, in this case, to see the differences between those who had previous experience with social entrepreneurship and those who did not.
- Focus group and interview: to know the experiences lived by students, and teachers, that allow to carry out a social entrepreneurship project.

C. Data analysis

Quantitative data were analyzed with SPSS and AMOS software, version 24, to know the validity. In addition, for this study we observed the differences between the means of the participants with and without experience. For the qualitative analysis, the phenomenological analysis methodology of Moustakas cited by [25].

IV. RESULTS AND DISCUSSION

In this section, we present the preliminary results of the application of the instruments, we also include the statistical validation previously carried out on the social entrepreneurship instrument.

A. Social entrepreneurship instrument

We think it is pertinent to explain the validation of the questionnaire, which was divided into three processes: content validity carried out through an expert judgement; construct validity calculated from the exploratory factor analysis (EFA), and; the calculation of reliability.

The judges assessed clarity, consistency and relevance per item and sufficiency per dimension. The rating scale was from 1 to 4. The average of the responses of all the judges for each of the items was obtained with the following weighting: clarity 20%, coherence 30%, relevance 50%.

Regarding the EFA, the analysis showed the relevance of establishing five dimensions in the questionnaire instead of the four initially established, where the 28 items that make up the questionnaire are distributed. The communities ranged from 0.46 to 0.76. Therefore, the saturation of each item was adequate. Finally, Cronbach's alpha coefficient showed an overall reliability of the instrument of 0.86 and by dimension: Leadership for social change: 0.76; Social innovation: 0.60; Social value: 0.72; Management for social change: 0.77.

Preliminary results show a mean overall domain level of $M = 3.16$ $SD = 0.67$. Inexperienced participants show an average general domain level of $M = 3.10$ $SD = 0.69$.

Experienced participants show a mean overall mastery level of $M = 3.28$ $SD = 0.63$. In other words, students with entrepreneurial experience do achieve higher levels of proficiency, according to what the instrument reports, which tells us that we could trust their results to make generalizations; however, it is necessary to establish tests of statistical significance for future studies.

B. Interview and focus group instrument

The discussions were transcribed and analyzed to obtain 118 meaningful statements, then a meaning was given to each statement and they were grouped into 13 clusters:

- 1) Linkage with other actors
- 2) Recognition that a problem exists
- 3) Social entrepreneurship is not philanthropy
- 4) Cross-cutting skills are dominant
- 5) Perseverance in scenarios of uncertainty and failure
- 6) Immersion in the context of social problems
- 7) Learning processes in reality
- 8) Disciplinary knowledge
- 9) Institutional promotion of social entrepreneurship
- 10) Entrepreneurial identity for social change
- 11) Project validation
- 12) Continuous process
- (13) Define and fully understand the problem

Triangulation of multiple data sources was used to validate results. In this regard, Creswell & Poth [25] mention that this process consists of corroborating the evidence from various sources, i.e., triangulating the information to validate the results of the research. Therefore, for this work we triangulated information from the experience of students, teachers and literature on the elements of social entrepreneurship competencies. The following table shows the triangulation with respect to theme 5) "Perseverance in scenarios of uncertainty and failure" (Table I).

TABLE I. TRIANGULATION.

Student	Professor	Literature
"In my case it was the whole process of making it start, it teaches you to have courage not to fall, even if they tell you that the school is gone, it is to be persevering, and it brings its reward"	"We all want a better world, a social change, but executing actions is what differentiates the entrepreneurial capacity (speaking of the entrepreneurial intention) is about the sacrifices required to be an entrepreneur"	Tenacity and perseverance: the capacity for constancy in a task or action from beginning to end; carrying it out with sacrifice, commitment and determination; overcoming the first adversities or difficulties; and overcoming failure.

V. CONCLUSIONS

The results obtained in the first pilot were of vital importance to establish the final tools of the OpenSocialLab project. It is expected that in the first stage of the project they will be refined and brought to a higher validity and reliability, in order to determine if and how students scale levels of

mastery of social entrepreneurship competence. That is, in addition to acquiring knowledge, skills and attitudes of entrepreneurship, they acquire and demonstrate the philosophical and ethical competencies of social entrepreneurship: code and ethical sense, awareness of others, critical thinking and involvement in social reality. The results will be contrasted in order to design a training model in social entrepreneurship that can be implemented in various institutions of higher education. Regarding the limitations and recommendations, it is necessary to apply statistical tests to determine the significance of the different measures reported by the social entrepreneurship instrument.

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