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# Educational and Social Entrepreneurship of Future Teachers in the Framework of Open Education and Sustainable Development\*

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## ABSTRACT

Entrepreneurship in education must be observed from the viewpoint of creation, generation of ideas, and implementation of pedagogical innovations that allow teachers to develop their potential as entrepreneurs and manage the development of entrepreneurial skills in students. The purpose of this document is to present the current status of a research plan for a doctoral thesis concerning training for the development of educational and social entrepreneurship competences in future teachers by implementing training models with open, experiential education, using educational resources, open practices, and evidence aimed to create innovation and generate social value. To understand the problems on which the research topic focuses, we present an advance of the literature review, as well as the proposal for the design of a mixed-integrated methodology that embeds an explanatory sequential method to collect quantitative and qualitative data. With the results, we hope to propose an innovative training model that links the professional training of teachers with educational and social entrepreneurship competences that contribute to sustainable development. The progress of this research to date shows the theoretical contributions underlying our theoretical framework and the methodology.

## CCS CONCEPTS

• Social and professional topics • User characteristics • Cultural characteristics • Educational Innovation • Higher Education

\* Educational and social entrepreneurship of future teachers in the framework of open education and sustainable development.

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## KEYWORDS

Education entrepreneurship, Social entrepreneurship, entrepreneurial ecosystem, Educational Innovation, Open education, Higher Education.

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## 1 Context and motivation underlying this dissertation research

In this era of great transformations, rethinking educational processes is crucial for organizations dedicated to the formation of students. Higher education institutions play a preponderant role in the strengthening and consolidation of their students' competences for their incorporation into the world of work and development in society, so the institutions must themselves transform to be able to produce competent human capital [1] [2]. The major problems and needs of society today require education that promotes the sustainable development of communities and contributes to increasing the number of young people and adults with the necessary skills for employment or entrepreneurship [3]. So, it is important to emphasize that the issue of educational and social entrepreneurship raised in this research project is exceedingly relevant. We began by analyzing the literature to determine how this topic has been developed and to discover what types of innovations in the educational and social fields have focused on entrepreneurship and entrepreneurial training.

To contextualize the topic of study, we analyzed international, national, and local references to educational and social

entrepreneurship. The creation of companies, microenterprises, and the innovative processes within them was incorporated in university training programs for entrepreneurship in the United States in the 1980s. This next extended to universities in Europe [4], focusing mainly on the business area. In Mexico, the formation of entrepreneurs is promoted in universities; however, this is specifically directed toward certain professional degrees. Likewise, the National Institute of the Entrepreneur (INADEM), a decentralized administrative body of the Ministry of Economy, has a mission to implement national policies supporting entrepreneurs. It promotes the innovation and competitiveness of micro, small, and medium-sized enterprises in national and international markets to increase economic development and social welfare within a culture of productivity [5]. For INADEM and some universities, the formation of entrepreneurs that impact the economic field plays an important role. However, the promotion of entrepreneurship training in some professional careers offered by public or private universities in the education sector, specifically regarding teacher training, does not include the development of educational and social entrepreneurship skills in the curricular graduation profiles [6]. This is observable at the national level in teacher training schools in Mexico. So, the training of teachers for entrepreneurship competences that promote educational innovation and provide solutions to social problems challenges the teacher training institutions.

Based on the above considerations, this research begins with the development of an action plan that aims to implement a model of open experiential education that promotes educational and social entrepreneurship competences in students (future primary school teachers). The intent is to contribute to sustainable development and assess the extent to which these competences are developed.

This document begins with state of the art in which entrepreneurship education and social entrepreneurship are defined, the competences for these types of entrepreneurship, and the conceptualization of open education and experiential learning. It then describes the hypothesis and objectives of the research project. Subsequently, it describes the method, the population and sample, the variables for this research, techniques and instruments for collecting information, resources to be used, and the procedure that will be used to convert the data into useful information. Afterwards, a brief explanation of the results to date and the progress in the development of the thesis are described. Then, the contributions that have been projected when the research has been concluded will be presented. Finally, the conclusions are presented in relation to the importance of the research to be developed.

## 2 State of the art

### 2.1 Educational and social entrepreneurship

Educational and social entrepreneurship has been conceptualized in recent years in different contexts. Educational entrepreneurship refers to developing an entrepreneurial mentality [7] and culture that begins with the training of students, so they can apply their knowledge, skills, and attitudes to take responsibility, innovate, and find solutions creatively and independently without explicitly needing to create new businesses. *Educational entrepreneurship* can be observed from three approaches: education about, for, or through the company [8]. Therefore, a challenge in entrepreneurial education is to move from educating *about* entrepreneurship to educating *for* entrepreneurship [9]. On the other hand, *social entrepreneurship* emerges as an initiative in integral education. It includes the activities and processes carried out to discover, define, and exploit opportunities for social well-being. This type of entrepreneurship aims to create social value [10] [11]. Entrepreneurs focused on this topic provide solutions to social problems by bringing into play innovation, creativity, and motivation, in addition to involving social actors [12] [13]. Social entrepreneurship empowers participants and boosts progress in making societal changes [14]. Considering these characteristics, we emphasize that educational institutions play a significant role in promoting social entrepreneurship. Therefore, it is important to train teachers and students with the necessary competences for entrepreneurship that lead to actions that solve social problems.

### 2.2 Educational and social entrepreneurship competences

Analyzing the competences of educational and social entrepreneurship lets us determine the knowledge, skills, and attitudes that are important for future teachers to develop. Social entrepreneurship competences include the skills to design, implement and evaluate a business plan, resolve conflicts, communicate with others, identify ideas, actors, and activities of the social economy, and undertake these activities confidently (even when they imply a challenge). The competences provide the skills for clerical work and the ability to identify social problems, lead others, organize, use interpersonal skills, and to motivate. Optimism, creativity, perception, understanding, innovation, marketing, emotional intelligence, and ethical attributes are characteristics of people trained for social entrepreneurship [15] [16].

Regarding competences for educational entrepreneurship, teachers must possess various skills to be able to train students as entrepreneurs [17] [18]. Teacher training based on practice responds to the concern that they must possess a highly qualified profile to educate the new generations [19]. In short, the competences of social entrepreneurship must be developed along with the competences of educational entrepreneurship. It is during the teaching-learning process that teachers and

teachers-in-training bring these types of competences into play. Therefore, defining a pedagogical model that includes progress in these competences is fundamental for educational institutions.

### 2.3 Open education and experiential learning

At this point, it is important to state that open education and experiential learning combined become an option for teachers' training. Open education incorporates a series of philosophies and practices aimed at broadening access for those who wish to learn. It currently focuses principally on the reuse and exchange of educational practices [20]; it is recently marked by the open educational movement that contemplates open practices and open educational resources. Open knowledge is a phenomenon that has been developed and analyzed contextually within completely multicultural environments [21]. Since its formation, the open education movement has been developing from two initiatives, namely, dissemination of scientific work with open access and the mobilization of knowledge through the production, distribution, use, and reuse of open educational resources (OER) to influence educational practices [22]. Open science brings with it the possibility of shared co-construction and the generation of open innovation that contributes to the public and private spheres [23]. Open education becomes a means to give a greater number of people access to resources and practices that facilitate learning. Therefore, its incorporation into the educational processes of institutions is a practice that should be considered.

On the other hand, experience is the basis and stimulus for experiential learning. There is a clear intention to use specific experiences for people to learn [24]. This model integrates experience, perception, cognition, and behavior in a cyclical process that enables the student to achieve learning through concrete experience, abstract conceptualization, reflective observation, and active experimentation [25]. It means that establishing a pedagogical model that combines open educational practices with experiential learning allows both students and teachers to reuse, create, exchange, and implement projects that contribute to the training of educational and social entrepreneurs, which has a favorable impact on the sustainable development of vulnerable communities.

### 3 Hypothesis

We have proposed the following research hypothesis: The implementation of training models of open education and experiential learning, using educational resources, open practices, and evidence oriented toward innovation and the generation of social value, impact the development of educational and social entrepreneurship competences in future teachers.

### 4 Objectives

The general objective of this research is to assess the extent to which educational and social entrepreneurship competences are formed in future teachers by implementing a training model employing open education and experiential learning. The model rests on the use of educational resources, open practices, and evidence oriented to innovation and generation of social value. The result is an innovative training model that guides the professional training of teachers toward proposing problem solutions that promote sustainable development.

The specific objectives of this research project are:

- To analyze the theoretical perspectives of educational and social entrepreneurship, competences, and characteristics of the entrepreneurs, as well as the educational models that incorporate open practices of experiential learning.
- To assess the impact of the production of open educational resources and their dissemination on the appropriation of knowledge of sustainable development by teachers in training.
- To corroborate the development of educational and social entrepreneurship competences in future teachers by implementing social entrepreneurship projects that contribute to sustainable development in vulnerable communities.
- To propose an innovative training model for the professional formation of teachers that contributes to sustainable development.

### 5 Research approach and method

The mixed-method will guide this study due to the possibility it gives to combine different techniques during the process. In mixed research, quantitative and qualitative techniques, methods, approaches, and concepts are mixed or combined to reach a greater understanding of the problem [26], and also to implement and investigate the innovations that are emerging in the educational field [27]. In this project, an integrated mixed-method is used. A convergent, sequential, explanatory, or exploratory method is embedded within a larger design (or strategy) [28]. The main idea is that quantitative or qualitative data are integrated into a larger design (for example, an experiment) and that the data sources play a supporting role in the overall design. In this case, the emphasis is on quantitative data collection, and then qualitative elements are added. The information is analyzed separately, and finally, questions are answered. The phases for the development of the research will be Phase 1: Collection of quantitative information (centesimal scale - pre-test and post-test) and a Likert scale, as well as qualitative data through a focus group with the students. Phase 2: Collection of qualitative information (in-depth interviews)

and quantitative data through a semantic differential scale with teachers and external agents.

## 5.1 Population and sample

The population is made up of teachers-in-training (students of the Primary School Teacher degree) at an institution located in northern Mexico, teachers, business persons, and people from the community and government agencies. The sample is comprised of students who belong to the same grade, and with whom the implementation of educational and social entrepreneurship projects will be promoted. Teachers who collaborate in the implementation of the proposal, people from the community and government agencies, and local business persons also participate as informants.

## 5.2 Study variables, techniques, and instruments

Three variables have been established to carry out the research: a) education and social entrepreneurship, b) education and social entrepreneurship competences, and c) open education in the formation of entrepreneurs.

### 5.2.1 A). Education and social entrepreneurship:

Entrepreneurship is more than the transformation of resources with only economic objectives; it also represents the art of turning an idea into reality [29]. The meanings of the term depend on the context. In the educational field, it refers to a set of characteristics that make a person act a certain way to demonstrate competences. An important function of educational entrepreneurship is to provide students with relevant simulation models that allow them to create activities, be creative, and take the initiative. On the other hand, in social entrepreneurship, entrepreneurs adopt an entrepreneurial spirit to create and maintain social value, pursue new opportunities, and focus their actions to fulfill their mission to solve problems that affect society.

5.2.2 B). *Educational and social entrepreneurship competences*: According to the Law on Higher Education in Ukraine, competency refers to a dynamic combination of knowledge, skills, professional and philosophical thinking, as well as civic qualities and moral and ethical values [30]. Entrepreneurship is a process of discovery, evaluation, and exploitation of entrepreneurial opportunities that involves starting a new project and offering innovative or alternative products or services to the market [29]. For this variable, the knowledge, skills, and attitudes that various authors propose concerning educational and social entrepreneurs are considered [15] [16] [17] [18].

### 5.2.3 C). *Open education in the formation of entrepreneurs*:

This contemplates practices and open educational resources to be used in forming the education and social entrepreneurship

competences of future teachers. Open educational practices include the creation, use, and reuse of open educational resources (OER), as well as open pedagogies and the open exchange of teaching practices [31].

The variables will be analyzed based on the information resulting from the application of the following instruments:

Centesimal scale questionnaire (pre-test - post-test). It will be applied to undergraduate students in Primary Education Teaching to identify the knowledge they have about the design and implementation of projects and the educational and social entrepreneurship competences they possess. (Variables: a) educational and social entrepreneurship, and b) Educational and social entrepreneurship competences).

Focus group. It will be carried out with undergraduate students in Primary Education Teaching to analyze their attitudes and perceptions about the implementation of educational and social entrepreneurship projects before and after their execution. (Variable a) educational and social entrepreneurship).

Likert-scale questionnaire. It will be applied to Primary Education students to evaluate the impact that OER production and dissemination have on the appropriation of sustainable development knowledge by teachers-in-training. (Variable: c) open education in the formation of entrepreneurs).

In-depth interview - semi-structured guide questionnaire: It will be implemented with entrepreneurial teachers, government agents, and business leaders to identify the societal needs to promote sustainable development and the educational and social entrepreneurship competences necessary for the teachers-in-training to develop. (Variables: a) educational and social entrepreneurship and b) Educational and social entrepreneurship competences).

Semantic differential scale: It will be implemented with teachers at different educational levels, people from the community, government agents, and business leaders to identify the societal needs to promote sustainable development and the educational and social entrepreneurship competences necessary for the teachers-in-training to develop. (Variables: a) educational and social entrepreneurship and b) Educational and social entrepreneurship competences).

## 5.3 Information Sources

*Students*: responsible for the design and dissemination of educational resources for the appropriation of knowledge of sustainable development, as well as the management and implementation of social entrepreneurship projects. They are considered the primary sample for determining the

development of educational and social entrepreneurship competences.

*Experts:* teachers, researchers, or business leaders who are experts in the field of educational or social entrepreneurship and work in practices that promote sustainable development, and with whom the instruments designed to investigate the research topic will be validated.

*Teachers:* they will participate as guides for student teams in the development of educational and social entrepreneurship projects, providing information regarding the educational and social competences that promote sustainable development in the communities. Also, they share their points of view on educational and social entrepreneurship competences that need to be developed in the future teachers.

*People from the community:* those who are actively involved in the development of social entrepreneurship projects, forming teams to work together with the students and key informants in the research process.

*Government agents and business leaders:* the sample of the population who will participate as key informants about the variables studied in this research.

*Educational resources:* The students will produce the resources for the appropriation of knowledge of sustainable development and the educational and social entrepreneurship actions.

*Digital material:* Databases (Scopus, WOS, among others), books, magazines, and articles to know the state of the variables in question, facilitate the theoretical framework, and aid in the analyses of results.

Additional resources to be used during the research include:

- SPSS: Software to perform concentrated and quantitative data analysis. Atlas Ti: Software to concentrate and analyze qualitative data.
- Google Forms: to collect information through surveys.
- Databases: To consult bibliography or articles.
- Institution's web page: to disseminate educational resources produced by the students.
- Video and photo cameras: to obtain evidence of the focus groups and the implementation of social entrepreneurship projects.

This work is developed in the Ph.D. program called "Training in the Knowledge Society" [32] [33] which manages an electronic portal accessible from <http://knowledgesociety.usal.es>, which is the main tool of communication and visibility of the progress [34]. It will provide information on all publications, exchanges, programs, and attendances at conferences that the doctoral student makes during the coursework. This thesis is developed

in the GRIAL Group of the University of Salamanca [35] [36] and the results of this thesis will be accessible in open access [37] [38] [39] [40].

#### 5.4 Information capture and analysis

The *capture-and-analysis process* will be carried out in the following sequence:

Pilot test of the instruments once they have been validated by experts in the field, with the aim of determining their validity and reliability [40]; data capture using SPSS and Atlas Ti software; analysis of the results to determine the reliability of the quantitative instruments; improvement of the instruments based on the recommendations of the experts and the results of the pilot test; application of the centesimal scale questionnaire (pre-test - post-test) with students of the Bachelor's degree in Primary Education Teaching; implementation of the Focus Group with the students of the Bachelor's degree in Primary Education Teaching before and after the execution of the educational and social entrepreneurship projects; application of the Likert scale questionnaire to these students; instrumentation of the in-depth interview using a semi structured guide-questionnaire with entrepreneurial teachers, government agents and business leaders; application of the semantic differential scale to teachers of different educational levels, people from the community, government agents, and business leaders; and, finally, data capture using SPSS and Atlas Ti and data analysis to determine the results of the application of the instruments.

For the *analysis of the quantitative data*, SPSS software will be used, and statistical tests will be performed based on the normality of the data behavior, using parametric or non-parametric tests. The *qualitative data* are processed separately using the Atlas Ti software to determine the categories that emerge, as well as the keywords and the relationships that exist between them. Finally, the results of the *quantitative and qualitative information are brought together* to answer the research questions. According to the type and design of the research selected, the qualitative information complements the quantitative, and vice versa.

From the beginning of this research, the ethical aspects of the process have been considered. For this reason, the consent of the participants will be requested so that they are free to carry out the activities voluntarily while being subjects of the research. Likewise, the responsibilities to the sponsors and the community, the communication, dissemination, well-being, and development of the researchers are considered under the guidelines of the British Association for Educational Research [41].

## 6 Results to date and validation

The linkage and co-collaboration among the academic, social, business, and government sectors for educational and social entrepreneurship represent a gap in the field of research. According to the systematic review of the literature to date, it was found that the training of entrepreneurs in universities focuses primarily on the entrepreneurial ecosystem. Therefore, it is necessary to implement training models that include open education and experiential learning in the training of teachers who later impact the formation of both educational and social entrepreneurs.

## 7 The current progress of the thesis

The current status consists of the development of the literature review that will support the construction of the theoretical framework, the temporal planning of the study, and the determination of the research population.

## 8 Current and planned contributions

The research project will contribute to the field of educational innovation, generating valuable knowledge by designing a training model for the development of educational and social entrepreneurship competences that assist future primary education teachers.

## 9 Conclusion

Encouraging entrepreneurship in children and young people contributes greatly to their personal and professional development, facilitates the development of leadership skills, creativity, teamwork, problem solving, communication, initiative and autonomy among many others competences related to the possibility of entrepreneurship. However, training for entrepreneurship requires a clearly defined process that considers a precise conceptualization of entrepreneurship competences within the curricula, the definition of methods, strategies and resources that should be used to achieve that students consolidate these competences. Therefore, the results of this research will contribute with the proposal of a training model for primary education teachers, with the intention that these teachers impact on the formation of new entrepreneurs who contribute to the development of society.

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