



Entrepreneurship in agricultural education in light of three epistemological approaches: A systematic review

El Emprendimiento en la educación agrícola a la luz de tres enfoques epistemológicos: Una revisión sistemática

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Summary

One of the ways to overcome the economic and productive needs of different rural areas is through entrepreneurship. For this reason, studying epistemologies such as phenomenology, constructivism, and empiricism encompasses the various questions and gaps that arise in the impacts of training young people in agricultural entrepreneurship activities. However, entrepreneurship provides solutions to social problems in each region. In this way, it also stimulates entrepreneurial notions among young people in agricultural schools and contributes to the transformation of environments, increasing the adapted economic dynamics in the regions, which ultimately contribute to the development of young people and the acquisition of entrepreneurial skills. A systematic review is conducted of articles published in indexed journals in English and Spanish that provide research contributions on agricultural entrepreneurship training, the experiences that arise according to the conditions and characteristics of each of the different studies conducted, and their adaptability to rural environments based on the paradigms that frame these conditions in each of the regions globally.

Keywords: Entrepreneurship, education, agricultural, constructivism, empiricism, curriculum research.

Resumen

Una de las maneras para superar las necesidades económicas y productivas de las diferentes zonas rurales, es a través del emprendimiento. Por este motivo estudiar desde epistemologías como la fenomenología, el constructivismo, y el empirismo, logra abarcar las diferentes preguntas y brechas que se presentan en las incidencias para el desarrollo formación de los jóvenes en actividades de emprendimiento agrícola. Sin embargo, el emprendimiento da soluciones a las problemáticas sociales en cada una de las regiones. De esta manera también logra estimular en los jóvenes de los colegios agrícolas nociones de emprendimiento, y genera aportes en la transformación de los entornos, aumentando las dinámicas económicas adaptadas en las regiones, que finalmente aportan al desarrollo de los jóvenes, y la obtención de capacidades en emprendimiento. Se realiza una revisión sistemática de artículos publicados en revistas indexadas en inglés y español de aportes investigativos en temas de formación en emprendimiento agrícola, las experiencias que se dan de acuerdo con las condiciones y características de cada uno de los diferentes estudios realizados, y su adaptabilidad en los entornos rurales a partir de los paradigmas que enmarcan estas condiciones en cada una de las regiones a nivel global.

Palabras claves: Emprendimiento, educación, agrícola, constructivismo, empirismo, investigación curricular.



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1. Introduction

Agricultural entrepreneurship education is a tool that enables the development of skills that seek to improve different problems and basic needs in different rural areas in a sustainable manner (Budi Priatna et al., 2021). In Colombia, one of the main difficulties in rural education is access to schooling. This situation is presented by the high dropout rates among rural youth (Arias Vargas et al., 2021). The schooling conditions and the minimal training in education according to the environments, generate few job opportunities, resulting in the migration of young people from rural areas to cities, in search of opportunities that improve their living conditions (Pereira et al., 2022).

The problem of school dropouts, which encompasses the rights of children and adolescents, generates deficiencies that end up being an uncertain experience, without taking into account the conditions of each of the environments (Diana Carolina Erira-Caicedo & Eunice Yarce-Pinzón, 2021). It is shown that agricultural entrepreneurship manages to develop business ideas and satisfy the demand of different markets (Huang et al., 2022a). Some of the experiences have left significant practices, which result in the association between education, the state and the community, allowing competitiveness and efficiency (Franco & Barona, 2018).

Therefore, entrepreneurship can be instilled through training in young people and in the areas of influence of agriculture (Bournaris et al., 2022), obtaining indices in line with “quality, profitability and sustainability of agricultural production.”

By introducing entrepreneurship into training processes in agricultural environments, it is shown that agriculture is undergoing evolution

(Tiberius & Weyland, 2023), of which the purpose of obtaining products that come from the land and meet the needs that arise today can be highlighted (Ortiz et al., 2021a). When responding to food needs, environmental and economic sustainability must be generated in each of the territories in accordance with the main agricultural products (Salas, W., Grueso, S., & Bernal, 2020).

This research is based on educational dynamics in agricultural entrepreneurship from different epistemologies. Within the systematic review, epistemologies such as phenomenology, constructivism, and empiricism are taken into account, as elements of education (Durán, 2009). The training of young people is induced towards business education, with the acquisition of knowledge from experience (Hägg & Kurczewska, 2021a). However, by raising the importance of epistemologies, a relationship with practice is achieved and they are molded towards constructivist currents, to generate a model of “opportunities” that become evidence as the basis of entrepreneurship (Rubleske & Berente, 2017).

Regarding the epistemological references that will be taken into account for the systematic review, these correspond to the bases of pragmatism, constructivism and phenomenology (Husserl, 2000; Piaget, 2009; Pierce, 1956). The reason for this choice is that in several of the classics of entrepreneurship, these types of positions have been taken up to develop their central concepts. For example, in some classics and pioneering studies of entrepreneurship, an important role is given to the evolutionary dimension in the notion of creative destruction, to the dimension of Being in terms of the role that will play in entrepreneurship and to the usefulness of ideas in a market economic context (Clara, 2012; Samuels, 2000; Schumpeter, 2003). Based on the above, we will then delve into the current

state of the dynamics of entrepreneurship education with emphasis on the *curriculum*.

The purpose of this research is to identify trends from three epistemological perspectives (pragmatism, constructivism, and phenomenology) in relation to agricultural entrepreneurship training programs (*curricula*). In this way, it is hoped to lay the groundwork for developing new alternatives for strengthening rural educational environments. To this end, the prism methodology presented in the following section was used as a basis.

2. Methodology

2.1 Research Design

The methodology used is a systematic review of academic scientific articles in English and Spanish, allowing for the harmonization of information from different research projects. In this case, in education and agricultural entrepreneurship, and the systematization of elements such as established epistemologies, seeking answers to questions that arise in the different investigations (García-Peñalvo, 2020) . To this end, it is developed through the PRISMA diagram, which allows for determining the priorities of the articles subject to this research and how the phenomena occurred (Ciapponi, 2021).

For the development of the research, a systematic review of national and international articles was conducted, taking into account different studies that could answer the research question. A search was conducted in databases such as Scopus, using three search terms: "entrepreneurship and education and agricultural empirical," "constructivism and entrepreneurship and education and curriculum ," and " pragmatism and entrepreneurship and education ." The inclusion criteria were articles

from 2017 to 2023, published in English or Spanish.

The results obtained from the categories revealed a total of 184 articles, of which a segregation process was carried out using the PRISMA flow diagram, in which articles and research with themes different from the object of study were removed, resulting in a total of 37 articles that are found within the bibliographic references of this research.

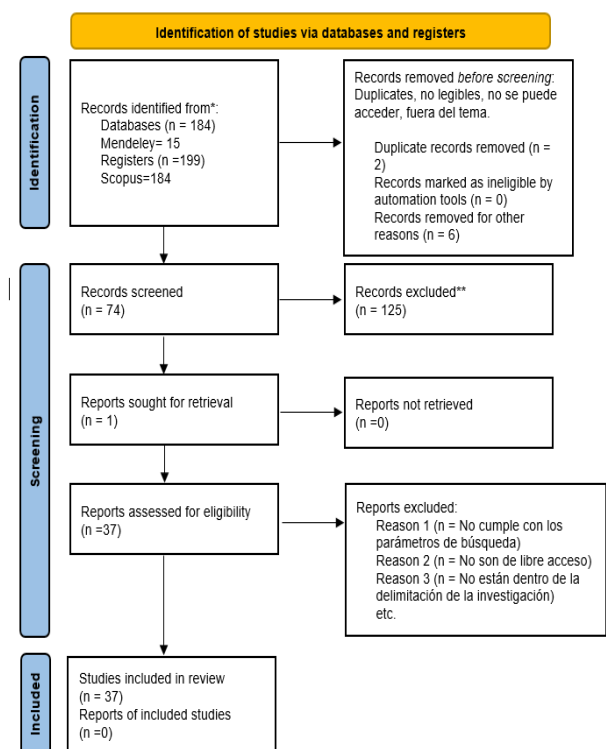


Figure 1. PRISMA flow diagram. Source: prepared by the authors based on (Page et al., 2021).

The bibliographic manager Mendeley was used to obtain academic research articles . Likewise, with the help of data classification and development tools such as Microsoft Excel, which uses pivot tables to characterize the information for the analysis of the data necessary to achieve the objectives outlined above, the information was coded according to

characteristics such as authors, year of publication, and type of study (qualitative, descriptive, quantitative).

The articles that were considered interventionist examined the application of educational models based on a sample for data collection. The descriptive articles analyzed the position of each author through the different methods used to gather information. Those that emphasized observation, questionnaires, and/or interviews, among other methods of obtaining information, emphasized the articles based on scientific theories of paradigms, specifically developed from different documents classified over time.

3. Results and discussion:

3.1 Methodology Used

Table 1. *Methodology Used in Scientific Articles*

Search Equation	Qualitative	Quantitative	Mixed	Total
Equation 1	5	2	1	8
Equation 2	11	8	3	22
Equation 3	7			7
TOTAL ITEMS				37

Source: Prepared by the authors.

As observed in Table 1, the search equations used in the research, with respect to the types of methodology, it stands out for equation 2 “Entrepreneurship and education and agricultural and empiricism” the qualitative methodology predominates with a total of 11 articles. The main characteristic in the study of agricultural entrepreneurship education is the basis from the empiricism paradigm, which probably links with the qualitative methodology, because it allows covering methodological gaps in the collection of information (Dalampira et al., 2022a). The possible causes for the superiority of qualitative

research works are due to the sociodemographic location of the research, which results in observational work and essential characteristics in the analysis of population behaviors, but it can also “bias” the information collected (Batonwero, 2022).

The description of the data allows the qualitative methodology to be the appropriate way to collect information (Nugroho et al., 2020). In this way, qualitative studies in agricultural entrepreneurship education develop results and conclusions from the source data.

In the case of critical review research in agricultural entrepreneurship education, the qualitative method was used. This method allowed documentary-type research to access the literature in the research area (Manning et al., 2020).

For the search equation “Constructivism and entrepreneurship and education and curriculum” we also observe that the majority of articles are qualitative, with one article using a mixed method approach. This methodology possibly allowed for the collection of numerical data and the analysis of research concepts regarding entrepreneurship (Awaah et al., 2022).

The paradigm of constructivism and entrepreneurship are currents that are linked by the development of formative processes that allow the union of two factors such as the “traditional didactic approach” and “experiential approaches”, which lead to the development of pedagogical powers in learning (Bell & Bell, 2020a). The realization of research articles based on paradigms achieves the precision of the methodology, which results in the characterization in an exploratory way, and features such as the formation and transformation of education in entrepreneurship are highlighted (Bell & Bell, 2020b). For search equation 3 “*Pragmatism and entrepreneurship*”

and education" no quantitative or mixed articles were found, possibly due to the type of equation and the epistemological basis of the research found. Therefore, from the paradigmatic base under study such as pragmatism, we can deduce that qualitative studies generate knowledge from sources already *"verified and validated."* (Guillén et al., 2015a) .

The connection between qualitative methodology and the phenomenological conception of knowledge is characterized by the reflection of invariable characteristics and experience in the moment (Núñez & Celis, 2017) , and is applied to entrepreneurship, which generates new knowledge through experimental actions by the entrepreneur (Rubleske & Berente, 2017b) .

Agricultural entrepreneurship is characterized by the innovation of ideas based on needs established in the territories. Therefore, efforts are concentrated on entrepreneurship in search of knowledge through the experience acquired by entrepreneurs (Pedrozo, 2016) . However, in some cases, entrepreneurship tends to be more fostered when it is worked on as a group rather than individually (Hägg & Kurczewska, 2021b) .

One of the most notable problems in agricultural entrepreneurship is the lack of interest among young people and the determination to emerge through innovative ideas in the agricultural sector, which generates potential ideas and economic development in the regions (Sargani et al., 2020a).

3.2 Articles with paradigmatic bases

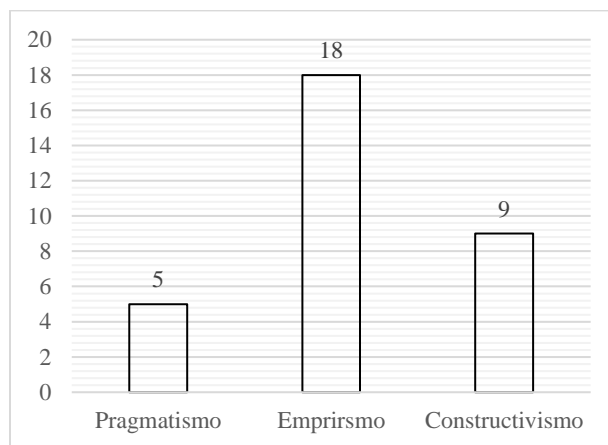


Figure 2. Articles with an Epistemological basis

Figure 2 shows the research articles that are supported by epistemologies. Empiricism has a propensity in writing articles related to agricultural entrepreneurship education. Therefore, this phenomenon can be given by the contribution of experience to technical training and education (Xie et al., 2021a) . On the contrary, we can determine the probability of "Endogeneity" in the conduct of research that arises from empiricism, causing possible gaps in scientific research (Yi et al., 2022).

The high number of articles that answer questions from the epistemologies studied in this review are characterized by the fact that they eventually begin learning from context and experience. (Kakouris, 2017) . Linking empiricism to agricultural entrepreneurship education fosters the development of entrepreneurial activities with academic training (Xie et al., 2021b) . However, knowledge from an empirical basis leads to results that can be positive as policies for agricultural entrepreneurship education or "agribusiness" (Sargani et al., 2020b).

The development of different ways of undertaking with education and training occurs for the purposes of social and economic

development in each of the regions (Adeyanju et al., 2021) . Historically, the conception of empiricism regarding academic training dates back a long time, supporting these developments in education. The action-experience approach has made contributions to learning and the generation of knowledge (Hägg & Kurczewska, 2021c) . However, the research articles under study, there are nine articles that take constructivism as the foundation in the research carried out (Abou-Warda, 2016) . This phenomenon of constructivism can occur from the dynamics generated to maximize knowledge in the teacher-student relationship, and the interrelationship that exists with other theories (Bell & Bell, 2020c) . The coherence found between constructivism and learning in entrepreneurship is given by the "transformation" within students at the time of acquiring knowledge (Rasiah et al., 2019) . The standards for understanding learning in entrepreneurship demonstrate the importance of establishing constructivism with the ideals of entrepreneurship education (La, 2018) .

Therefore, the success in the development of this paradigm linked to entrepreneurship is in accordance with the knowledge interests of students within the environment (Nasirun et al., 2021) . The teaching methods in teachers perceive the reinvestment of education as the "individual construction" in each student, based on reality and the empowerment of knowledge (Turrisi 2002). Pragmatism generates an environment for training in agricultural entrepreneurship, since it is molded by knowledge management by practicality as the foundation of learning (Guillén et al., 2015b) .

It is important to mention that in the systematic review process, the epistemology of phenomenology is absent in scientific articles related to agricultural entrepreneurship training.

4. Conclusions

Research dealing with the process of agricultural entrepreneurship education presents the difficulties of young people in accessing education and the adaptation of education to entrepreneurship derived from social environments. Likewise, among the results raised by the research carried out is the adaptation of public policies (Suárez Pineda et al., 2018 ; Dalampira et al., 2022b) .

On the other hand, encouraging agricultural development through entrepreneurship in schools is a key process in long-term positive results, giving rise to elements in current education that reduce social gaps (Anwarudin et al., 2019; Refiswal et al., 2021) .

Entrepreneurial skills provide alignment to work and learning on-site, which require certain training needs with educational environments and specialized human resources in agricultural environments. Therefore, the epistemology of empiricism and the acquisition of knowledge becomes an element that provides knowledge from agricultural practices already developed by young entrepreneurs (Khayri et al., 2011 ; Zhu et al., 2023; Novanda et al., 2020 ; Graskemper et al., 2021) .

The reviewed research and in accordance with the epistemology of constructivism form a strategic factor in academic training, which stands out because it improves knowledge in the sense of the orientation from the theoretical to the practical, which promotes business learning in accordance with the experiences described above and being an epistemology that adapts to the concept of entrepreneur, improving the conditions of students in the acquisition of knowledge from practice, as the foundation of education and the challenges of entrepreneurship training (Yoganandan et al., 2022 ; Córdova et

al., 2020 ; Namasembe & Manzanera-Ruiz, 2022) .

Agricultural entrepreneurship education is a tool that stimulates creative processes. As part of pragmatic epistemology, it encourages the development of entrepreneurial skills with specific proposals for the community. Entrepreneurial skills empower knowledge and achieve the inclusion of epistemologies in this process (González-Tejerina & Vieira, 2021 ; Vera-Sagredo et al., 2020) .

According to the knowledge needs of the students, it is possible to establish a link in the verification from practice to theory, which promotes epistemologies such as pragmatism in the process of vocational promotion in entrepreneurship, which contributes as an investment in knowledge, which results in effects in the future in each of the young people in the regions (Baggen et al., 2022 ; Guarnizo Vargas et al., 2019 ; Ranasinghe, 2005) .

As future lines of research, we propose a need to delve deeper into the curricular models for agricultural entrepreneurship training and their possible articulation. In this sense, a new search equation can be proposed to advance in this direction: "curriculum, entrepreneurship phenomenology, constructivism, model." In other words, and with a focus on the development of new studies, it is worth asking: To what extent and in what ways can the epistemological foundations of the different curricular models for agricultural entrepreneurship complement each other? We hope to continue advancing in this direction.

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