

ENTREPRENEURIAL EDUCATION IN HIGHER EDUCATION: A SYSTEMATIC MAPPING OF LITERATURE

MARIA ANDRESA SANTANA SILVA

UNIVERSIDADE FEDERAL DE SERGIPE (UFS)

MANUELA DE JESUS SILVA SANTOS

UNIVERSIDADE FEDERAL DE SERGIPE (UFS)

RÚBIA OLIVEIRA CORREA

UNIVERSIDADE FEDERAL DE SERGIPE (UFS)

GUSTAVO DAMBISKI GOMES DE CARVALHO

UNISENAI - FACULDADES DA INDÚSTRIA

MARIA ELENA LEON OLAVE

UNIVERSIDADE FEDERAL DE SERGIPE (UFS)

Agradecimento à órgão de fomento:

This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior

- Brasil (CAPES) - Finance Code 001.

ENTREPRENEURIAL EDUCATION IN HIGHER EDUCATION: A SYSTEMATIC MAPPING OF LITERATURE

Abstract

The present work aims to perform a bibliometric and systematic analysis of the scientific productions that address the interfaces of entrepreneurial education in higher education. The study is guided by an exploratory-descriptive perspective, with quantitative and qualitative approaches to the literature. With the help of the Vosviewer software and the Methodi Ordinatio, proposed by Pagani, Kovaleski, and Martins (2015). The main results point to a high number of scientific studies based on the relationship between entrepreneurial education in higher education and entrepreneurial intention. Thus, this study provided an opportunity for some contributions, at the theoretical level, it highlighted the lack of research that addresses the perspective of entrepreneurial education in higher education, especially nationally; at the practical level, it pointed out the existence of increasing entrepreneurial opportunities when one has access at the higher level. For future research, we suggest more research and further studies on the subject.

Keywords: Entrepreneurial. Entrepreneurial education. Higher Education. High school. Bibliometrics. Web of Science. Systematic Literature Review. Entrepreneurial Intent. Innovation. Developed Skills.

1. INTRODUCTION

The existing literature in the academy on entrepreneurship is incipient, it is necessary research for the knowledge of the most diverse types of entrepreneurship, especially in education. Entrepreneurial education is currently emerging both in new educational practices to entrepreneurial training, as well as in research in the field of entrepreneurship and administration (Fayolle, 2013; Boas & Nascimento, 2020; Shane & Venkataraman, 2000).

The difficulty of entrepreneurial education is an emerging theme at academic research because professors are not always able to pass on their knowledge about entrepreneurship in a way that facilitates the understanding of students (Dolabela, 2008).

Different from most self-help manuals, scientific literature asserts it is not possible to teach an individual to be a successful entrepreneur (Dolabela, 2008; Schaefer & Minello, 2020). However, there is knowledge based on the theory of entrepreneurship connected to higher education, which can be disseminated, interfering in the strengthening of entrepreneurial skills and competences and, inciting entrepreneurial intentions (Barba-Sánchez & Atienza-Sahuquillo, 2017; Bastos et al., 2021; Mei et al., 2020).

Educational institutions should be prepared to transmit knowledge, worrying about students' learning and training entrepreneurs. For Kuratko (2005), the search for opportunities, the ability to take risks and the tenacity to turn an idea into reality are characteristics that permeate entrepreneurs.

To learn entrepreneurship is a social act directed to experiences permeating personal growth, without following the traditional predefined model, but making it exciting and relevant to the university student (Barnard et al., 2018; Rae et al., 2010).

When teaching entities follows entrepreneurial education, they instigate knowledge in students and stimulate economic development (Solomon, 2007). It is important to highlight that, despite the importance (Zhang et al., 2014), there are few studies on entrepreneurial

education in higher education (Adu et al., 2020; Barba-Sánchez & Atienza-Sahuquillo, 2017; Hoang et al., 2021; Mei et al., 2020).

Given the incipience of the subject in academia, several gaps are observed, such as: the fragile form of teaching tending to be inconsistent with the current economic and political situation; the lack of teaching experience in some universities that think only about the advantages of offering the course and not about the responsibility of knowledge transfer (Dolabela, 2008). This reinforces the relevance of this study considering the lack of research, especially Brazilian ones, providing relevant discussions on the theme about entrepreneurial education in higher education (Ribeiro & Plonski, 2020).

Motivated by these factors, and to contribute to the discussion about entrepreneurial education in this study, a bibliometric and systematic analysis of scientific productions addressing the interfaces of entrepreneurial education in higher education was carried out.

The work has the general objective of performing a bibliometric and systematic analysis of scientific productions approaching the interfaces of entrepreneurial education in higher education. To achieve the general objective, the following specific objectives were proposed: 1) To describe the general overview of entrepreneurial education; 2) To identify the main researches related to entrepreneurial intention; 3) To identify the main researches on connection with innovation; 4) To identify the main researches on association with entrepreneurial skills, and, finally; 5) To identify the promising paths in researches on entrepreneurial education.

This article is divided into the following sections: the first one presents the contextualization on the theme of study, research introductory notes, objective of the research, justification, and structure of the article. The second section is composed by the theoretical framework about historical contextualization on entrepreneurship and entrepreneurial education in higher education. In the third section, the methodology adopted in the study is described. The fourth section presents the analyses and discussion of the results. Finally, in the sixth section, the conclusion of the article, presenting the contributions, limitations of the study, and recommendations for future research.

2. ENTREPRENEURSHIP AND ENTREPRENEURIAL EDUCATION IN HIGHER EDUCATION

To begin to discuss entrepreneurial education, it is necessary to unravel the etymology of the term entrepreneurship. According to Baggio and Baggio (2014), "entrepreneurship", "empreendedorismo" in Portuguese, is derived from the Latin word *imprehendere*, followed by the word "empreender", originated from Portuguese language, used in the 15th century. The word "empreendedor" (entrepreneur) is also originated from Portuguese language, from 16th century. "Empreendedorismo" is originated from the translation of "entrepreneurship", from English language, made up by the French word "entrepreneur" and the English suffix "ship".

Entrepreneurship is a theory from the term entrepreneur. According to Braudel (1982), the term entrepreneur is from 1709, however, the word with the meaning referring to an individual controlling a company would have emerged with Abbé Galiani in 1770. Only with the research by Saint Simon began to be spread with greater emphasis. For Hisrich and Peter (2004), the development of the theory of entrepreneurship and the term entrepreneur was initially introduced into history from the Middle Ages until 1985, when it was conceptualized as a value creation procedure with temporal dedication and effort, admitting psychological, social, and financial risks, with satisfactory consequences both personal and economic.

The theories dealing with entrepreneurship are economic and behavioral theories. Economic theories established, such as Shumpeterian theories, state that economists were the first to identify the relevance of entrepreneurship.

According to Martes (2010), to undertake is to exercise a function and is not a permanent condition for individuals or for collectivities. From this assertion, two essential points arise. The first one is that the entrepreneur does not belong to a social class, the position of an entrepreneur is not an inheritance, but a matter of conquest; secondly, the entrepreneur has a management function, but not necessarily is the owner of the company, so, the social condition for the exercise of this function is wide.

Teaching itself is challenging and complex, when questioning about entrepreneurial education, it is easy to think: how to teach an individual to undertake? How can it be possible to teach an individual to detect opportunities that may appear and use their resources to take advantage of it?

It is about this teaching vision that Malacarne et al. (2014), explain about the current educational system investing in the training of professionals to seek a specialized profession in a company, i. e., to be employed, instead of stimulating the entrepreneurial side of students and forming managers of their own businesses. This attitude generates impacts for the institution, facing resistance and conflicts in the process of change for students and teachers.

According to Lorentz (2015), universities seeking to promote entrepreneurship do it exclusively focused on business and technology management, excluding other disciplines, such as psychology, sociology, and other areas that care about the understanding of human behavior.

As can be seen, entrepreneurship in higher institutions is still an emerging subject, as well as the definition of the term itself, entrepreneurship. However, the existing definitions already demonstrate to be a significant teaching line providing conditions for the search for opportunities from creativity and innovation.

Corroborating this, Dolabela and Filion (2013) stand up for a radical change in relation to traditional teaching methods focuses only on knowledge transfer, seeking a focused, independent, and dynamic learning. To explain the particularities of each teaching proposal, Dolabela (2008) describes the characteristics of traditional education and entrepreneurial education. Entrepreneurial education must emphasize the process of learning to learn, making the participant to appropriate learning.

Identifying, capturing, developing, and implementing new opportunities, as defined by Dornelas (2008), demand a series of changes in how to apply resources in the company and guide the creation of new business skills.

Accordingly, Hindle (2007) conceptualizes entrepreneurial education as a knowledge transfer movement encouraging the creation of goods and services through the exploration of opportunities. This definition refers to the understanding of the exclusive responsibility of entrepreneurial education, not fixed only to teachers in the classroom, which opens a range of possibilities for various institutions.

Reinforcing the concept of entrepreneurial education, Rae et al. (2010) state that learning about entrepreneurship is a social act, oriented to practice/experience involving personal growth, different from the traditional model with predefined paths. The teaching of entrepreneurship must be thought-provoking, pleasurable, and of great relevance to the learner. In his research, Politis (2005) argues that teaching entrepreneurship in a technical way does not manifest an expressive and immediate result in the progress of knowledge.

3. METHODOLOGY

As for the purposes, this research is exploratory, since it is an emerging area, so it is necessary to carry further studies out to consolidate knowledge about the relationship between entrepreneurial education and higher education institutions.

It is a descriptive study, since it is typified in the study "the description of the characteristics of a given population or phenomenon, or the establishment of relationships between variables" (Gil, 2019, p. 27). Regarding the approach to the question, the research is classified as quantitative and qualitative. It is characterized as quantitative using statistical instruments, both in data collection and in their treatment (Bardin, 2016), and qualitative, because it is a detailed analysis of the selected articles (Cresweel, 2016).

To the development of this research, the option is a bibliometric analysis and a systematic review of the literature to identify what is being published on the themes Entrepreneurial Education and Higher Education Institutions. A bibliometric analysis facilitates the identification of trends of knowledge growth on a given subject, dispersion and obsolescence of scientific fields, most productive authors and institutions, and journals most used in the dissemination of research in a given area of knowledge (Soares et al., 2016).

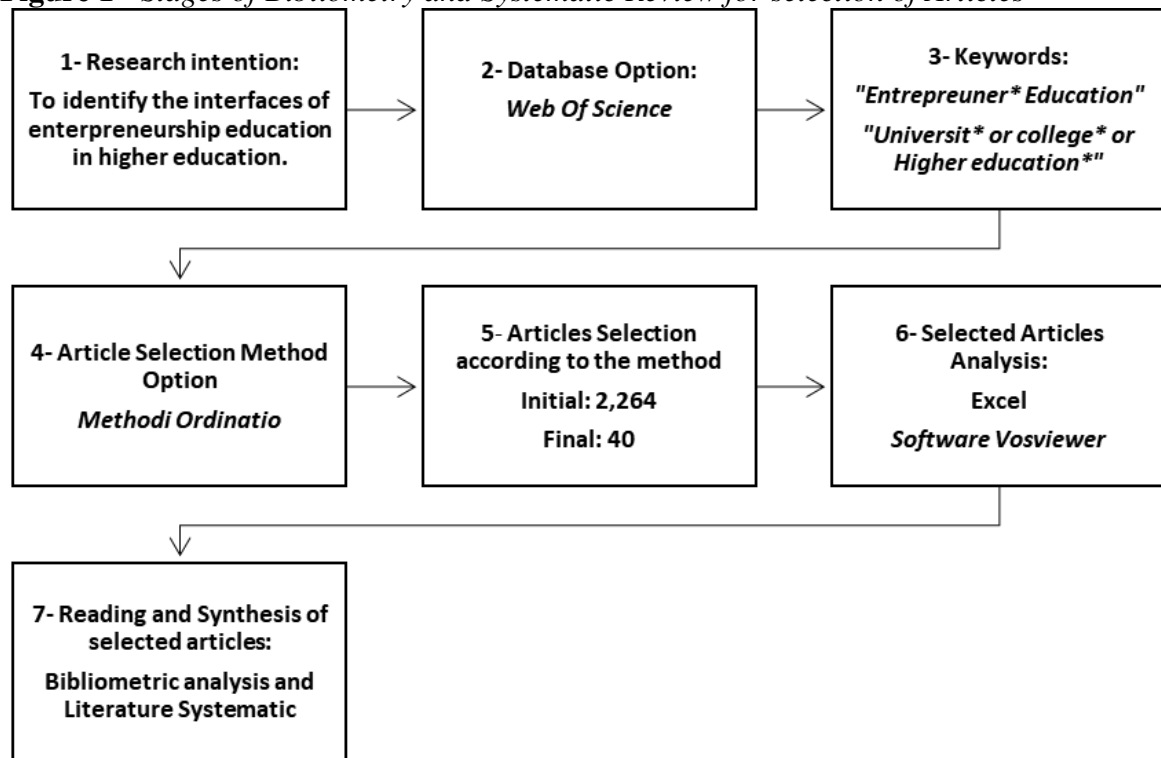
The methodology used to perform the systematic review was the *Methodi Ordinatio*, proposed by Pagani et al. (2015). It is a multicriteria methodology to assist the selection of scientific articles for the creation of a consistent and well-founded bibliographic portfolio (Pagani et al., 2015). For the authors, the method allows the articles to be classified in relation to the degree of relevance and the quality of the publication, considering three principles: the impact factor of the journal, the year of publication and the number of citations of the article, researched through the *Web of Science (WoS)* database.

The choice of this database allows the export of the data necessary for the analysis of publications, citations, and preparation of the instruments of analysis and reviews. In addition, the WEB provides a set of metadata including abstracts, references, number of citations, list of authors, institutions, countries, and the impact factor of the journal (Carvalho et al., 2013). The keyword defined were: "*Entrepreuner* Education*" "*Universit* or college* or Higher education**".

The model proposed by the authors Pagani et al. (2015) has 9 steps: (i) definition of the research intention, (ii) exploratory preliminary research in bibliographic databases, (iii) definition of keywords and combinations, definitions of databases, and selection or time amplitude, (iv) definitive search in databases and collection, (v) filtering procedures, (vi) identification of the impact factor and number of citations, (vii) ordering the scientific relevance of the articles by *InOrdinatio*, (viii) downloading the articles in PDF, and (ix) systematic reading and analysis of the articles.

The steps were adapted to this study and can be observed in Figure 1 below.

Figure 1 - Stages of Bibliometry and Systematic Review for selection of Articles



Source: Prepared by the authors (2021), adapted to the model of Pagani et al. (2015).

The first search performed in WoS using the key words "Entrepreneur* Education" "Universit* or college* or Higher education*" resulted in 2,264 articles. Next, the articles found were aligned with the researched theme, through the reading of the titles of the selected articles. The result was 492 articles. In the face of these results, the Pareto Principle was applied to select the articles presenting approximately 80% of the citation, resulting in a total of 97 articles. The other articles were discarded.

After reading the abstracts of these articles, only 50 of them addressed the relationship between entrepreneurial education and higher education institutions. Following the model proposed by Pagani et al. (2015), regarding the downloads of pdf articles, 10 articles were discarded, since it was impossible to access the databases on which they were published.

To facilitate the organization, the preparation of graphs, and analysis of the collected data, the softwares Excel and VOSviewer were used. In Excel, all processes of organization of the collected bibliographic data were performed: separation of searches and attachments of the WoS data base; the *Methodi Ordinatio*, a method necessary to perform the procedures for the articles. In VOSviewer, the authors, countries, co-citation, and co-occurrence were analyzed, allowing the elaboration of graphs presented later in the analysis of the results.

4. ANALYSIS AND DISCUSSION OF RESULTS

After present the theoretical framework and methodology, it is time to discuss the main research inclinations and the most promising themes. Thus, this section is divided into five

topics: 1) The overall overview of entrepreneurial education; 2) Research on the relationship with entrepreneurial intention; 3) Research on the connection with innovation; 4) Research on the association with entrepreneurial skills, and finally; 5) Promising paths in research on entrepreneurial education.

4.1 ENTREPRENEURIAL EDUCATION - OVERVIEW

The bibliometric analysis was outlined based on the 40 articles selected in the *Web of Science* database presenting a direct relationship with entrepreneurial education in higher education. Thus, the following descriptions were accomplished: most cited authors, co-occurrence of key words, distribution of articles by category and co-authorship of countries.

In the articles selected, 240 authors are listed. However, the most esteemed authors on the subject were highlighted, in other words, authors considered more relevant: Liñán, F.; Nabi, G.; Walmsley, A.; Favolle, A.; Krueger, N.; Bechard, J; Gregoire, D.; Gray, D.O.; and Rideout, E.C.

Table 01 below presents these authors, the number of published documents, as well as the number of citations.

Table 01 - Most cited authors

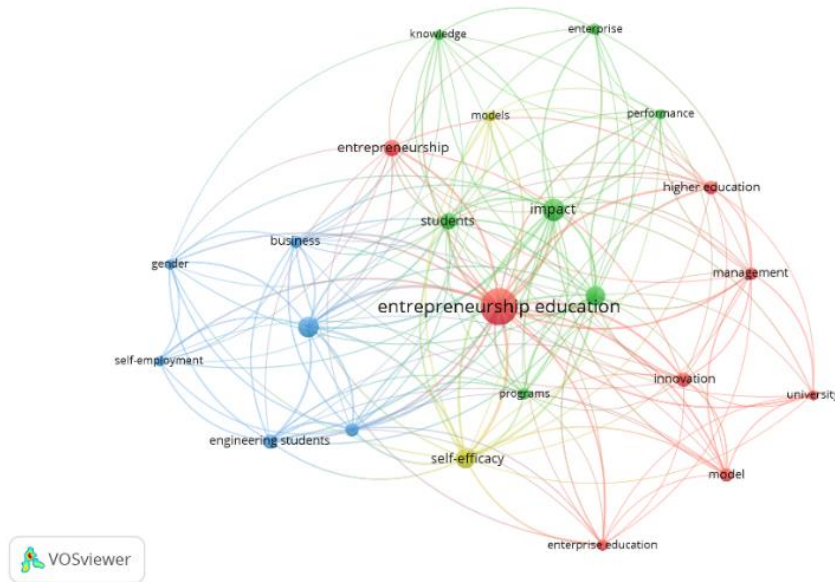
AUTHORS	DOCUMENTS	CITATIONS
LIÑÁN, F	2	306
NABI, G	2	306
WALMSLEY, A	2	306
FAYOLLE, A	1	232
KRUEGER, N	1	232
BECHARD, J	1	180
GREGOIRE, D	1	180
GRAY, D. O	1	174
RIDEOUT, E.C	1	174
DUYSTERS, G	1	136
ZHANG, Y	1	136

Source: Prepared by the authors (2021)

Through the analysis of the co-occurrence network, it can be assessed that "*entrepreneurship education*" is the most used keyword. The occurrence of these words is justified by virtue of the field of study analyzed, it is natural that they were the ones that occur most frequently. It is also noted the occurrence of clusters of similarity between interrelated keywords, "*impact*", "*self-efficacy*", and "*entrepreneurial intention*". The red network has a higher correlation between the keywords "*higher education*" and "*entrepreneurship education*". The green network presents the convergence between the words "*impact*" and "*entrepreneurial intention*". On the other hand, the green network has a greater association between the expressions "*student*", "*impact*", and "*entrepreneurial intention*". It is important to highlight the correlation of the theme with the word "*entrepreneurial intention*", in which there is a positive relationship between entrepreneurial education and entrepreneurial intention of students when they leave undergraduate courses.

The co-occurrence analysis, presented in Figure 02, presents the most important keywords in the studies.

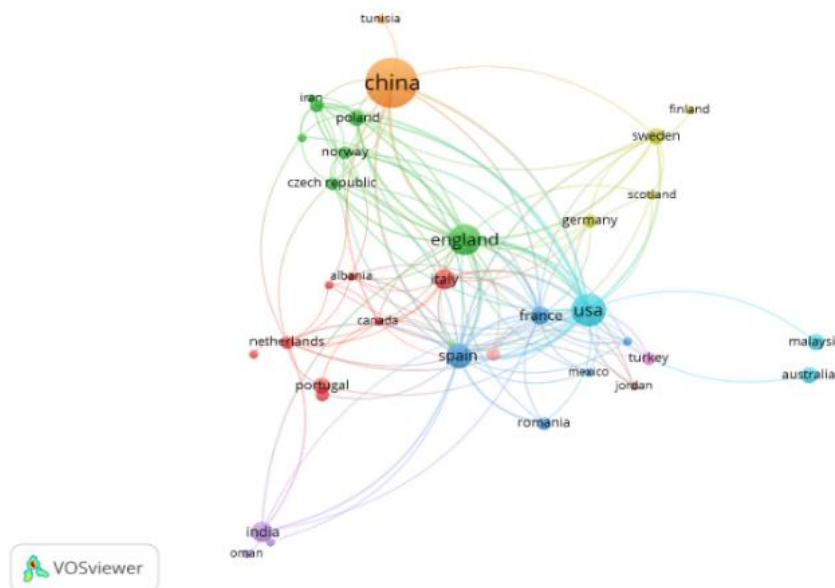
Figure 02 - Keyword co-occurrence networks



Source: Prepared by the authors (2021) in the Vosviewer software

The co-authorship analysis, presented in Figure 03, shows the countries that contributed the most to academic production about entrepreneurial education in higher education.

Figure 03 - Co-authored networks between countries



Source: Prepared by the authors (2021) in the Vosviewer software

The predominance of publications and citations among countries becomes noticeable: China, 10 articles; United States, 6 articles; England, 6 articles; Spain, 4 articles; France, 4 articles, and Italy, 3 articles. Considering the database used, *Web of Science*, and the Pareto Principle, it is emphasized that, in Brazil, only one study was published on the subject, pointing out the lack of studies published in the field of study. Given the asserts, there is a promising existence of research opportunities on the theme of entrepreneurial education in higher education for Brazilian researchers. The analysis of categorization by theme can be observed in table 02.

Table 02 - Distribution of identified categories

CATEGORIZATION	NUMBER OF ARTICLES
Entrepreneurial Education and miscellaneous themes	12
Entrepreneurial Education and Intent	11
Entrepreneurial Education and Innovation	8
Entrepreneurial Education and Skills	5
Entrepreneurial Education in undergraduate courses	4
TOTAL	40

Source: Prepared by the authors (2021)

The correlation between entrepreneurial education in higher education with general themes such as gender, success models, business ecosystems, satisfaction, sustainable development in education, international entrepreneurship, teacher training, impact on training after undergraduate, individual entrepreneurial education, and family history is noticeable. A concentration of studies related to the theme studied with entrepreneurial intention can be observed. After that, the association of entrepreneurial education and innovation, followed by the entrepreneurial skills developed. It is also emphasized the correlation between the subject under study with the learning mechanisms used in universities.

4.2 SYSTEMATIC REVIEW OF THE THEME ENTREPRENEURIAL EDUCATION IN HIGHER EDUCATION

Following the presentation of the bibliometric analysis, this subsection presents the discussion about the main research tendencies and the ten most promising themes in research on entrepreneurial education in higher education.

4.2.1 Entrepreneurial Education and Entrepreneurial Intent

In the context of entrepreneurial education in higher education, associated with entrepreneurial intention, there are some opportunities in research, and the need for independence is a key factor in the entrepreneurial intention of higher education students (Barba-Sánchez & Atienza-Sahuquillo, 2020). According to Schlaegel and Koenig (2014), entrepreneurial intent is essential to understanding entrepreneurship, and explores opportunities in the discovery process (Kolvereid, 2016).

The positive influence between entrepreneurial education, developed in higher education, and entrepreneurial intention was observed in the study conducted by Hoang et al. (2021), at a university in Vietnam. In this study, it is possible to see the indirect effects of self-efficacy and practical orientation to entrepreneurship, in the intentions of entrepreneur, exposing the theoretical and practical contribution to the importance of entrepreneurial education within higher education institutions

In a similar study, Barba-Sánchez and Atienza-Sahuquillo (2017) investigated Engineering students at the University of Castilla-La Mancha, in Spain. It was identified that the profile of Engineering students enables the positive relationship entrepreneurial education exercises before the intention of creating a business, while assisting government entities in establishing strategic measures to minimize unemployment, trying to promote entrepreneurship.

In a dissimilar perspective, Zang et al. (2014), sought to analyze the relationship between entrepreneurial education in higher education, entrepreneurial intention and if both influence the increase in the rate of entrepreneurship success in a country. In China, 80% of entrepreneurs are men, and the study was conducted in 10 Chinese universities.

It can be observed a negative relationship between entrepreneurial education and the increase in entrepreneurship rates in the country, an unusual result, considered surprising for researchers. According to the authors, a possible justification is the fact that the participants of the sample were concentrated only among those who had a negative relationship to entrepreneurship, later identified as family entrepreneurship.

In contrast, Welsh et al. (2016) conducted a study at a medium-sized university in southeastern North Carolina, USA. In the study, the objective was to analyze the entrepreneurial intention of the students through the knowledge and skills acquired during the entrepreneurship course. It is noted that the curriculum of students who had access to the entrepreneurship course during undergraduate presents a knowledge not so deep, but functional to impact the decision to undertake and the success of the enterprise.

From a historical perspective, Mei et al. (2020) presented a study on the evolution of entrepreneurial education in higher education institutions in China. The objective was to explore the influences of entrepreneurial education in the entrepreneurial intention of students in seven universities. According to the authors, for this study, it is relevant to consider the level of engagement in entrepreneurial education of students. It can be noted that students from different institutions present a different commitment to entrepreneurial education. Thus, it is observed that inserting entrepreneurial education in higher education increases awareness among teachers and educational institutions that education focused on entrepreneurial practice deserves a differentiated intention, due to the opportunities and possible influences the students can have with the intention of undertaking.

Motivated to explore the factors that guide the relationship between entrepreneurial education and the entrepreneurial intention of students, the study conducted by Adu et al. (2020) provides support for institutions to develop programs, policies, and actions to help students to develop skills and competencies, the ability to take risk and proactivity, essential in companies today. According to the authors, this aid will positively influence the effective search for becoming autonomous and opening their own businesses. Confirming the study by Barba-Sánchez and Atienza-Sahuquillo (2017).

Aligned with the above, researchers Küttim et al. (2014), presented the relationship between the curriculum of students inserted in the entrepreneurial education program in higher education and entrepreneurial intention. Logistic regression technique was used, with data from 55,781 university students located in 17 European countries. According to the authors, it is

relevant to highlight, in the institutions analyzed, the predominance of teaching practices focused on networking and coaching activities, more longed for by students than traditional teaching practices, with teacher transmitting knowledge, without interaction between students. There is a positive relationship between the teaching of entrepreneurship and the intentions of these students to undertake.

In a systematic review of the literature, Barnard et al. (2018) aimed to present an initial analysis of existing publications on entrepreneurial education in community colleges, to organize the theoretical frameworks, for future research fundamentals. 203 scientific articles were used as a sample on the subject. The authors divided the results of the study into four focal areas, with more promising themes guiding the formation of a general structure underlying the perspective on entrepreneurial education in universities. The focus groups are organizational effectiveness, a magnifying glass on education, educational programs in different educational institutions, and educational programs as student training.

Based on behavioral theory to create a conceptual structure, the study by Tariq Ahmed and Jane Klobas (2017) compared the differences between entrepreneurial attitude, subjective norms, perceived behavioral control, and entrepreneurial intention of students who participated in the entrepreneurial education program with control group of the *Master of Business Administration* (MBA) in Pakistan. The study sought to examine, in detail, the factors that motivate the intentions between the two groups. In short, it can be noted that MBA students are more involved and have greater entrepreneurial intentions than students of undergraduate programs. However, the authors did not identify any differences in attitude, control, behavior, and subjective norms in relation to entrepreneurial education in both groups. The authors conclude that the entrepreneurial intention of MBA students is more evident due to social pressure when compared to undergraduate students, only influenced by massive behaviors of controls, previously established.

In a comparative study, Soomro et al. (2019) proposed to analyze the role of entrepreneurial education on entrepreneurial intent among Business university graduates, in Sindh, Pakistan. The results of this research are useful for educational institutions, and especially for government entities, while students upon graduation become the entrepreneur in the future, contributing to the local economy.

In view of the context presented on entrepreneurial education in higher education, it is essential to point out the importance of entrepreneurial education in higher education, given its impact, both economic and educational.

4.2.2 Entrepreneurial Education and Innovation

Entrepreneurial education in higher education, associated with innovation, presents some opportunities in research. Innovation is necessary in national development, in the promotion of quality, efficiency, economic renewal (Cao, 2017), besides it offers innovative didactic modalities to the formative process of future entrepreneurs (Souza et al, 2020). Inserted in the university environment, the association between innovation and entrepreneurship promotes new research, assists in the creation of new products, new market segments, and in the training of students with a spirit focused on entrepreneurship and innovation (Costa et al., 2011).

In a study conducted at Huazhong Agricultura University (HZAU), researcher Cao (2017) observes the techniques of implementation of innovation and entrepreneurial education within this institution. In this study, the author sought to understand, with acuity, the connotation of entrepreneurial education and clarify the mistakes during its implementation,

based on three principles: complete promotion; integration of professional education with entrepreneurial education and innovation; and, finally, student-directed assistance. In this study, it is noted that the educational institution boosted the practices of innovation and entrepreneurial education through activities and reforms to promote the innovative and entrepreneurial capacity of students. The fact presented significant results for the university, which is currently highlighted by the efficient way and quality of talents.

In accordance with the above, Wang (2019), in his article entitled "*Concrete Ideas on the Organic Integration of Innovation and Entrepreneurship Education and Professional Education in Colleges and Universities in Shaanxi*" aimed to present the need for and importance of integrating innovation, entrepreneurial education, and professional education into colleges and universities in Shaanxi. In this study, it can be observed that the Colleges and Universities of Shaanxi need to deepen the reform of entrepreneurial education and innovation to remove the obstacles of this learning model aimed at vocational courses to effectively integrate all these sections with entrepreneurial education.

In an alternative approach to entrepreneurial education, the study by Huq and Gilbert (2017), conducted at a University in Australia, presents the *design thinking* to innovate in the entrepreneurship course. Through iterative innovation in the delivery and evaluation model, supported by classroom community fundamentals, constructivism, justice, and equity, humor and role-making, this article treats the improvements in the course by using this strategy aligned with the use of innovation.

Based on the entrepreneurship and popular innovation aspect, the researchers Xu and Li (2017) proposed to analyze and define Gray's current model of relational analyses, hereinafter GRA, using virtual variables to represent data related to the implementation of innovation and entrepreneurial education in Chinese universities. In this study, the authors also aimed to understand whether the types of universities have impacts on the effects of entrepreneurial education. It can be observed that the type of university has a direct impact on awards related to entrepreneurship and entrepreneurial education focused on innovation.

The association between entrepreneurial education and innovation can be seen in the article "*Construction of Innovation and Entrepreneurship Education System in the Transformational Development of Local Undergraduate Colleges*". According to Liu (2017), author of the study, the objective is to understand the balance between traditional education and professional education, as well as to analyze the development of technology and scientific research, as well as the relationship between innovation and entrepreneurial education. It is observed that the process of innovation of the local university and transformed entrepreneurship, it is not enough to rely only on the strength of the university itself, it is also necessary government and related companies' support. In this way, the joint efforts of all sectors of society to create a good environment of innovation and entrepreneurial education can provide the right innovation and entrepreneurial talent for society.

The objective of the study conducted at the University of Zilina, presented by Závodská et al. (2019) is to present a learning method that proves to be more efficient and presents possible recommendations on how to develop entrepreneurship education programs related to innovation. The case study shows that entrepreneurship education focuses less on traditional teaching based on lectures from individuals and more on experiential learning activities, presenting a more playful approach with access to innovation. The experience related to play and the innovation is presented in this study as the best approach to entrepreneurial education, unlike the traditional development of business plans. However, the study also showed that continuous modification of the curriculum is mandatory. Therefore, recommendations on how to develop entrepreneurship programs have been proposed

Given the scenario on entrepreneurial education in higher education and the association with innovation, it is essential to point out the importance of the theme, due to its impact, both on economic development and on the higher education educational system.

4.2.3 Entrepreneurial Education and Developed Skills

In the scenario of entrepreneurial education and the skills developed, it is possible to analyze the influence of entrepreneurial knowledge on students through the skills presented by them. According to Baggio and Baggio (2014), entrepreneurial skills are skills related to change management, leadership, innovation, personal control, ability to take risks and vision of the future. This research found, in the *Web of Science* database, five articles on entrepreneurial skills.

Hahn et al. (2019), in the article "*The impact of entrepreneurship education on university students' entrepreneurial skills: a family embeddedness perspective*", contributed to literature with the type of Entrepreneurial Education (elective vs. compulsory) and entrepreneurial skills of higher education students, in addition to measure the exposure of a family entrepreneur as two complementary boundary conditions contributing to explain the results of the Entrepreneurial Education. To this end, the research included a sample of 427 university students from Austria, Germany, Switzerland, Italy, Spain, Estonia, Hungary, and Poland. As a result, it can be observed that both types of entrepreneurial education contribute to the entrepreneurship of students' abilities. However, the impact of entrepreneurial education on compulsory courses depends on students' perceptions of the performance of parents as entrepreneurs.

In accordance with the context of the previous article, Tedjakusuma et al. (2019), with the article "*Incorporating entrepreneurship education into curriculum: case studies from the University of Surabaya, Indonesia and Tokai University, Japan*", aimed to present several approaches to equip students in understanding concepts, knowledge, and even entrepreneurial skills, in order to obtain strong positions and strategic thoughts in order to significantly increase the number of entrepreneurs. It is observed that entrepreneurial education in the university curriculum increases success and improves students' practical business skills and increase motivation to start their own business.

About the same vision of skills, Ghafar (2020) on the research "*Convergence between 21st century skills and entrepreneurship education in higher education institutes: an exploratory study from undergraduates' perspective*", resulted in a quantitative study with interpretive analyses. The objective is to carry out a self-assessment of the higher education institution to observe and analyze the level of adoption of entrepreneurship development methods, specifically to support entrepreneurship and innovation, and cooperation in knowledge transfer at the Polytechnic Institute of Guarda (GPI). To this end, semi-structured in-depth interviews were conducted with 12 students and 1 focus group session of universities in the United Arab Emirates. It can be noted that the results of this study also highlight the statement that students learn more easily with an active education for entrepreneurship. Thus, students equipped with essential skills are more motivated and experimental by nature and tend to dive into unknown situations that differentiate them from individuals with low confidence in skill level.

At the same time, offering more information about the skills, Souza et al. (2020), in the article "*Innovation and Entrepreneurial Education with the Role-Play Model in Higher Education*", proposed a qualitative and quantitative research carried out in focus group at UFS - Federal University of Sergipe (Universidade Federal de Sergipe), to analyze the effectiveness

of role-play in entrepreneurial education. The main results showed satisfactory expressions of students' perceptions in the development of aspects of the affective domain, cognitive, and psychomotor, serving as a support for new research on the theme of entrepreneurial education and its skills.

Finally, in the article "*Study on the development of entrepreneurial culture in the university environment*", Tudor et al. (2020) conducted a quantitative study with a descriptive-quantitative analysis method in a sample of 100 university students in Romania, to analyze the perception of academics about the importance of professional development while expanding teaching skills and competencies considered necessary for entrepreneurial education. The authors highlighted the importance of developing transversal competencies, such as: digital skills, learning strategies to learn, sense of initiative and cultural awareness. As a result, it is noteworthy that the implementation of entrepreneurial education programs is the responsible means for the development of essential competencies necessary for professionals trained by higher education institutions.

These studies were the only findings in the *WoS* database, this shows the lack of studies in entrepreneurship skills. The studies were conducted in 5 countries: Brazil, Italy, United Arab Emirates, Romania, and Japan. The Italian article obtained information from 7 European countries in addition to their own country of origin.

4.2.4 Promising Paths to Future Research on Entrepreneurial Education

Recent publications point out the most promising themes cited by researchers for the development of the study on entrepreneurial education. Table 03 below points out the most cited themes as promising by the experts, and their respective research propositions, in decreasing order of attendance in the citations.

Table 03 - Promising paths and propositions for future research

Promising Themes	Future Issues
Impact of education on entrepreneurship in universities	What are the impact measures of entrepreneurial education on higher education?
	How has teaching for entrepreneurship impacted universities?
Entrepreneurial education and impact indicators related to emotion and entrepreneurial mindset	How do emotions and entrepreneurial mentality imply entrepreneurial education in universities?
	What indicators of emotions and entrepreneurial mentality impact on entrepreneurial education?
Comparison of the overview of entrepreneurial education in higher education and high school;	How does entrepreneurial education in higher education equate to entrepreneurial education offered in high school?
	What is the importance of promoting entrepreneurial education in high school and higher education?
The success rate of companies founded by former students, with entrepreneurial skills developed during graduation, through entrepreneurial education	What is the influence of entrepreneurial education on the success rate of companies?
	How have the entrepreneurial skills developed in undergraduate studies impacted on the success of companies?
The influence of undergraduate courses (engineering, design, medicine, and pedagogy) on entrepreneurial education	How do undergraduate courses have influenced the teaching of entrepreneurial education?
	At what point can undergraduate courses influence the teaching of entrepreneurial education?

Comparison of teaching methods used in entrepreneurial education	How do teaching methods interfere with entrepreneurial education in higher education?
	What teaching methods are used in higher education for entrepreneurial education?
Association between innovation and entrepreneurial education	How can the relationship between entrepreneurial education and innovation promote entrepreneurship teaching?
	What are the impacts of the relationship between innovation and entrepreneurial education in universities?
The implication of entrepreneurial education in the skills developed	How does entrepreneurial education help in the development of entrepreneurial skills?
	What is the implication of entrepreneurial education in the skills of higher education students?
The relationship between entrepreneurial education and entrepreneurial intentions	How is the relationship between entrepreneurial education and the intentions of university students established?
	How the teaching strategies adopted by entrepreneurial education in higher education have influenced the intention aimed at entrepreneurship?
Challenges of entrepreneurial education in universities	How are universities motivated to offer entrepreneurial education?
	What are the difficulties observed in the implementation of an entrepreneurial education program in universities?

Source: Prepared by the authors (2021) based on the systematic review

Another theme that deserves to be highlighted in future research is the relationship between education, gender, and entrepreneurial intentions. Women make up a substantial part of the population of university students, approximately 54% of the total number of higher education students in the European Union (Eurostat, 2018). In view of this, there is an indirect impact of education on entrepreneurial intentions (Marques et al., 2018), consequently, the female gender has higher rates than men when referring to entrepreneurial intentions (Nowinski et al., 2020). Therefore, it is necessary to analyze how entrepreneurial education, of men and women, implies entrepreneurial intentions.

4.2.5 Theoretical Framework for Entrepreneurial Education in Higher Education

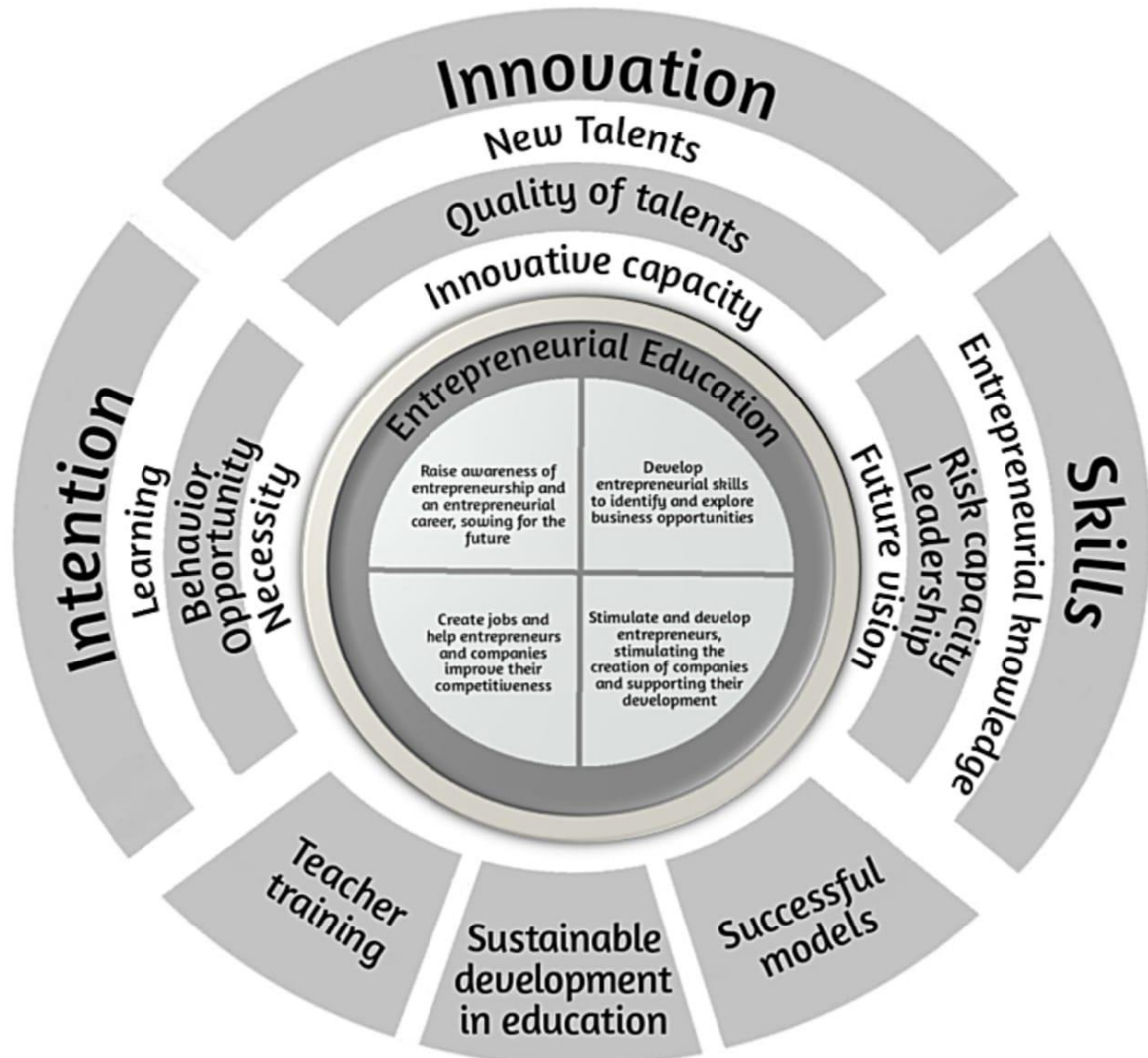
Considerable changes, political and economic, have impacted society in recent years. Changes uniquely motivated by technological innovation. Immersed in this context, higher education institutions emerge with a new responsibility. In addition to teach, research, and extension studies, currently, the university needs to contribute to the creation of new businesses and be essential for the emergence of innovation (Salume et al., 2021), promoting an entrepreneurial culture.

Hoang et al. (2021), recognizes that entrepreneurial education, as a social and political tool, emerges to encourage entrepreneurial intentions and awaken in students' skills facilitating their journey towards entrepreneurship.

Research on entrepreneurial education in higher education can be related to several emerging topics with research potential, such as gender, success models, business ecosystems, satisfaction, sustainable development in education, international entrepreneurship, teacher training, impact on after-graduation training, individual entrepreneurial education, and family history. However, most publications focus on the relationship between entrepreneurial

intentions, skills developed, and the insertion of innovation in teaching in universities. Motivated by these factors and contributing to future research, this study presents Figure 4, a theoretical framework on entrepreneurial education in higher education.

Figure 04 - Theoretical Framework on Entrepreneurial Education in Higher Education



Source: Prepared by the authors (2021) based on the systematic review

Entrepreneurial education in higher education tied to innovation represents an important milestone in the formation of new talents. The focus is graduates leaving universities with well-developed entrepreneurial skills and, when undertaking in the market, they can help strengthen the national economy (Cao, 2017).

Universities tries to promote, in their students, an innovative spirit, with career awareness making them acquire abilities and skills to promote entrepreneurship with commitment, facilitating their chances of success and career development.

5. FINAL CONSIDERATIONS

The present work aimed to analyze the interfaces of the theme entrepreneurial education in higher education, to present theoretical contributions, through a systematic review of the literature.

The use of the method of systematic literature review with content analysis allowed an exploration of the main topics analyzed, as well as considering potential horizons with more promising themes for future research on entrepreneurial education in higher education.

The results show a high number of studies based on the relationship between entrepreneurial education in higher education, and entrepreneurial intention. However, new research is needed to analyze the passage of entrepreneurial intention for the act of undertaking in practice, corroborating the study of Ribeiro and Plonski (2020).

Among the findings, few studies related on the association between entrepreneurial education and innovation can be noted, pointing to a lack of studies on this aspect associated with entrepreneurial education. Therefore, it is necessary to develop more research on the subject to fill this gap in academia.

In a smaller amount, articles were found about entrepreneurial skills showing the lack of studies related to this view of entrepreneurship, although the articles found are of great depth, presenting relevant information about entrepreneurial education and its skills. However, the academy needs more research in this area since there is a gap in this relationship.

The analysis of the literature on entrepreneurial education in higher education provided some contributions, both at the theoretical and practical level. Among the main theoretical contributions, the contribution to the academic field is emphasized, in view of the lack of studies that explain this theme, especially nationally. Thus, this study contributes in a crucial way to the dissemination of knowledge, encouraging new researchers to study this theme, as well as encouraging new studies on new designs of entrepreneurial education.

About practical contributions, it is observed the existence of entrepreneurial opportunities, given the positive relationship between education and the entrepreneurial intentions of graduated students. It is also noted that, when leaving the entrepreneurial education program of universities, the student/entrepreneur establishes goals, objectives, and plans the entire process of a business, a fact that possibly allows the identification of a new market segment.

Obstacles and limitations are also opportunities and encouragement for the development of new studies and the continued search for solutions that may be beneficial to more individuals than those in the spotlight. The main limitations of this study are inherent to the methodological choice of the authors, a single database, *Web of Science*, was used.

To this end, we support the need for further and deeper research on the subject. The proposal is the research be replicated at another time, given the need to analyze Chinese articles, and also replicated in other databases confronting the findings. Another proposal for future research is the development of studies associating entrepreneurial education and innovation. Since, with the COVID-19 pandemic, the study became on-line, indicating the need for new teaching methodologies and the continuous use of technology. Therefore, future research in this area would be very promising.

BIBLIOGRAPHY

- Adu, I.N., Boakye, K.O., Suleman, A.-R., & Bingab, B.B.B. (2020), "Exploring the factors that mediate the relationship between entrepreneurial education and entrepreneurial intentions among undergraduate students in Ghana", *Asia Pacific Journal of Innovation and Entrepreneurship*, 14(2), 215-228.
<https://doi.org/10.1108/APJIE-07-2019-0052>
- Baggio, A. F. & Baggio, D. K. (2014). Empreendedorismo: Conceitos e Definições. *Rev. De Empreendedorismo, Inovação e Tecnologia*, 1(1), 25-38.
- Barba-Sánchez, V., & Atienza-Sahuquillo, C. (2017). Entrepreneurial intention among engineer-ing students: The role of entrepreneurship education. *European Research on Management and Business Economics* 24(1), 53-61.
<http://dx.doi.org/10.1016/j.iedeen.2017.04.001>
- Bardin, L. (2016). *Análise de conteúdo*. Traduzido por Luís Antero Reto, Augusto Pinheiro. São Paulo: Edições 70.
- Barnard, A., Pittz, T., & Vanevenhoven, J. (2018) "Entrepreneurship education in U.S. community colleges: a review and analysis", *Journal of Small Business and Enterprise Development*, 26(2), 190-208.
<https://doi.org/10.1108/JSBED-06-2018-0178>
- Bastos, M. F., Souza Neto, B., & Diniz, D. M. (2021) Não-Manual do Empreendedorismo: Atividades Reflexivas para uma Educação Empreendedora. *Revista da Micro e Pequena Empresa*, 15 (1), 24 - 40.
<http://dx.doi.org/10.48099/1982-2537/2021v15n1p2440>
- Bechard, J, & Gregoire, D. (2005). Understanding teaching models in entrepreneurship for higher education. In *The Dynamics of Learning Entrepreneurship in a Cross-Cultural University Context*. Edited by Paula Kyrö and Camille Carrier. *Tampere: Faculty of Education*, University of Tampere, 104–34. 2005.
- Boas, E. P. & Nascimento, F. (2020). A Evolução das Publicações sobre Educação Empreendedora: Uma Análise a partir da Bibliometria. *Revista da Micro e Pequena Empresa*, 14 (2), 23-43.
- Braudel. F. *On History*. Chicago University Press.1999. ISBN:226071510.
- Cao, Z (2017). Thought and Practice on the Innovation and Entrepreneurship Education for College Students. *DEStech Transaction on Social Science, Educations and Human Science*.
<http://dx.doi.org/10.12783/dtssehs/aems2017/8270>
- Carvalho, M., Fleury, A., & Lopes, A. P. (2013). An overview of the literature on technology roadmapping (TRM): Contributions and trends. *Technological Forecasting and Social Change*, 80 (7), 1418-1437.
- Creswell, J. W. (2016). *Projeto de pesquisa: métodos qualitativo, quantitativo e misto*. 3 ed. 2010. Reimpressão, Porto Alegre: Artmed.
- Costa, D., Barbosa, F. V., & Silva, C. H. P. (2011). Empreendedorismo e inovação: o papel da educação superior nas economias mundiais. *Anais eletrônicos do XI Colóquio Internacional sobre Gestão Universitária na América do Sul, Florianópolis*. [s. n.]. Disponível em: < <https://core.ac.uk/reader/30355146> > Acesso em: 24 jul. 2021.
- Dolabela, F. (2008). *Oficina do empreendedor*. Rio de Janeiro: Sextante.
- Dolabela, F., & Filion, L. J. (2014). FAZENDO REVOLUÇÃO NO BRASIL: A INTRODUÇÃO DA PEDAGOGIA EMPREENDEDORA NOS ESTÁGIOS INICIAIS DA EDUCAÇÃO. *Iberoamerican Journal of Entrepreneurship and Small Business*, 2(3), 134–181.

- <https://doi.org/10.14211/regepe.v2i3.137>
- Dornelas, J. C. A. (2008). Empreendedorismo: transformando ideias em negócios. Rio de Janeiro: Elsevier.
- Eurostat – Statistics Explained (2018). Disponível em: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=education_statistics Acesso em: 06 jul. 2021.
- Fayolle, A. (2013) Personal views on the future of entrepreneurship education. *Entrepreneurship & Regional Development*, 25(7), 692-701. <http://dx.doi.org/10.1080/08985626.2013.821318>
- Ghafar, A. (2020). Convergence between 21st Century Skills and Entrepreneurship Education in Higher Education Institutes. *International Journal of Higher Education*. 9 (1), 2020 <http://dx.doi.org/10.5430 / ijhe.v9n1p218>
- Gil, A. C. (2019). Métodos e Técnicas de pesquisa Social. 7 ed. São Paulo: Atlas.
- Hahn, D., Minola, T. Bosio, G, &Cassia, L. The impact of entrepreneurship education on university students' entrepreneurial skills: a family embeddedness perspective. *Small Business Economics*, 55, 257–282. 2019.
- Hindle, K. (2007). Teaching entrepreneurship at university : from the wrong building to the right philosophy. In Greene, Patricia G. & Rice, Mark P. (ed), *Entrepreneurship education*, Edward Elgar, Cheltenham, England, (pp.135-158).
- Hisrich, R. D., & Peter, M. P. (2004). Empreendedorismo. Porto Alegre: Bookman
- Hoang, G., Le, T.T.T., Tran, A.K.T.& Du, T. (2021). "Entrepreneurship education and entrepreneurial intentions of university students in Vietnam: the mediating roles of self-efficacy and learning orientation", *Education + Training*, 63 (1), 115-133, 2021. <https://doi.org/10.1108/ET-05-2020-0142>
- Huq, A.& Gilbert, D. (2017), "Todo o mundo é um palco: transformando a educação para o empreendedorismo através do design thinking", *Education + Training*, 59 (2),155-170. <https://doi.org/10.1108/ET-12-2015-0111>
- Kolvareid, L. (2016). Preference for self-employment prediction of new business start-up intentions and efforts. *The International Journal of Entrepreneurship and Innovation*, 17 (2), 100–109.
- Kuratko, D. F. (2005). The Emergence of Entrepreneurship Education: Development, Trends, and Challenges', *Entrepreneurship Theory and Practice*, 29(5), 577–597. <https://doi.org/10.1111/j.1540-6520.2005.00099.x>.
- Küttim, M., Kallaste, M., Venesaar, U., & Kiis, A. (2014). Entrepreneurship education at university level and students' entrepreneurial intentions. *Procedia - Social and Behavioral Sciences* 110 (1), 658 – 668. <https://doi.org/10.1016/j.sbspro.2013.12.910>
- Liu, H. (2017). Construction of Innovation and Entrepreneurship Education System in the Transformational Development of Local Undergraduate Colleges. *Advances in Social Science, Education and Humanities Research*, v. 96, 55-59. <https://doi.org/10.2991/hsmet-17.2017.11>
- Lorentz, M. H. N. (2015). O comportamento empreendedor de diretores da UPSM e sua percepção quanto à Universidade Empreendedora. [Dissertação de mestrado da Universidade Federal de Santa Maria, Centro de Ciências Sociais e Humanas, Programa de Pós-Graduação em Administração].
- Malacarne, R., Brunstein, J., & Brito, M. D. (2014). Formação de Técnicos Agropecuários Empreendedores: O caso do IFES e sua participação na OBAP. *Iberoamerican*

- Journal of Entrepreneurship and Small Business*, 3(2), 20–41.
<https://doi.org/10.14211/regepe.v3i2.125>
- Marques, C., Santos, G., Galvão, A., Mascarenhas, C., & Justino, E. (2018) Entrepreneurship education, gender and family background as antecedents on the entrepreneurial orientation of university students, *International Journal of Innovation Science*. 10 (1), 58-70.
<https://doi.org/10.1108/IJIS-07-2017-0067>
- Martes, A. C. B. (2010). Weber e Schumpeter: a ação econômica do empreendedor. *Revista de Economia Política*, 30 (2), 254-270.
- Mei, H., Lee, C.-H., & Xiang, Y. (2020). Entrepreneurship Education and Students' Entrepreneurial Intention in Higher Education. *Education Sciences*. 10 (9), 257.
<https://doi.org/10.3390/educsci10090257>
- Nabi, G., Liñán, F., Favolle, A., & Krueger, N. Walmsley, A. (2017). The Impact of Entrepreneurship Education in Higher Education: A Systematic Review and Research Agenda. *Academy of Management Learning & Education*. 16 (2).
<https://doi.org/10.5465/amle.2015.0026>
- Nowiński, W., Haddoud, M., Lančarič, D., Egerová, D., & Czeglédi, C. (2020). The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Studies in Higher Education*, 44 (2).
<https://doi.org/44.1-19.10.1080/03075079.2017.1365359>.
- Pagani, R. N., Kovaleski, J. L., & Resende, L. M. M. (2015). Methodi Ordinatio: A Proposed Methodology to Select and Rank Relevant Scientific Papers Encompassing the Impact Factor, Number of Citation, and Year of Publication. *Scientometrics*, 105 (3), 2109-2135.
- Politis, D. (2005). The Process of Entrepreneurial Learning: A Conceptual Framework', *Entrepreneurship Theory and Practice*, 29(4), pp. 399–424.
<https://doi.org/10.1111/j.1540-6520.2005.00091.x>.
- Rae, D., Gee, S., & Moon, R. (2010). The role of an entrepreneurial learning team in creating an enterprise culture in a university. In: *Handbook Of Research In Entrepreneurship Education*. Edward Elgar, Cheltenham, pp. 274-296.
- Rideout, E.C. & Gray, D. O. (2013). Does entrepreneurship education really work? A review and methodological critique of the empirical literature on the effects of university-based entrepreneurship education. *Journal of Small Business Management*, v. 51, 329–51.
- Ribeiro, A. T. V. & Plonski, G. A. (2020). Educação Empreendedora: o que dizem os artigos mais relevantes? Proposição de uma revisão de literatura e panorama de pesquisa. *Iberoamerican Journal of Entrepreneurship and Small Business*, 9(1), 10–41.
<https://doi.org/10.14211/regepe.v9i1.1633>
- Salume, P. K., Dias, G. F., Junqueira, L. R., & Guimarães, L. O. (2021). Estímulo ao Empreendedorismo no Ensino Superior sob a Perspectiva dos Discentes. *Revista de Administração FACES Journal*, 20(1), 1-18.
- Schaefer, R. & Minello, I. F. (2020). Desafios Contemporâneos da Educação Empreendedora: Novas Práticas Pedagógicas e Novos Papéis de Alunos e Docentes. *Revista da Micro e Pequena Empresa*, 14 (3), 134-149.
- Schlaegel, C. & Koenig, M. (2014). Determinants of Entrepreneurial Intent: A Meta-Analytic Test and Integration of Competing Models. *Entrepreneurship Theory and Practice*. 38 (2), 291 – 332.

- Shane, S. & Venkataraman, S. (2000) The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review*, 25 (1), 217-226.
- Soares, P. B., Carneiro, T. C. J., Calmon, J., & Castro, L. O. C. (2016). Análise bibliométrica da produção científica brasileira sobre Tecnologia de Construção e Edificações na base de dados Web of Science. *Ambiente Construído*. 16 (1), 175-185.
<https://doi.org/10.1590/s1678-86212016000100067>.
- Solomon, G. (2007). An examination of entrepreneurship education in the United States", *Journal of Small Business and Enterprise Development*, 14 (2), 168-182.
<https://doi.org/10.1108/14626000710746637>
- Soomro, M. A., Memon, M. S., & Bukhari, N. S. (2019). Entrepreneurial Education and its Impact on Entrepreneurial Intentions: A Comparative Analysis of Business Graduates of Public and Private Universities of Sindh. *Pacific Business Review International*, 11 (6), 36-41.
<https://www.researchgate.net/publication/340793582>
- Souza, L. N., Cruz, C. A. B., Vasconcelos, J. R., Paixão, A. E. A., & Silva, D. P. (2020). Inovação e Educação Empreendedora com o Modelo do Role-Play no Ensino Superior Innovation and Entrepreneurial Education with the Role-Play Model in Higher Education. *Revista GEINTEC*, 10 (3), 5505-5516.
- Tariq Ahmed, V. G. R. Chandran Jane, & Klobas, C. (2017). Specialized entrepreneurship education: does it really matter? Fresh evidence from Pakistan, *International Journal of Entrepreneurial Behavior & Research*, 23 (1), 4-19.
- Tedjakusuma, A. P., Parung, J., & Kumamoto, J. (2019). Incorporating entrepreneurship education into curriculum: case studies from the University of Surabaya, Indonesia and Tokai University, Japan. *Advances in Social Science, Education and Humanities Research, 16th International Symposium on Management (INSYMA)*, v. 308.
- Tudor, L. S., Langa, C., Bulgaru, I., & Lazar, A. N. Study on the development of entrepreneurial culture in the university environment. *12th International Conference on Electronics, Computers and Artificial Intelligence (ECAI)*, 2020, 1-4,
<https://doi.org/10.1109/ECAI50035.2020.9223153>.
- Wang, F. (2019). Concrete Ideas on the Organic Integration of Innovation and Entrepreneurship Education and Professional Education in Colleges and Universities in Shaanxi. *Advances in Social Science, Education and Humanities Research*, v. 376.
- Welsh, D. H. B., Tullar, W. L., & Nemati, H. (2016). Entrepreneurship education: Process, method, or both? *Journal of Innovation & Knowledge*, 1 (3), 125-132.
<http://dx.doi.org/10.1016/j.jik.2016.01.005>
- Xu, J. & Li, Y. (2017). Grey relational analysis model of classified variables and its application in Jiangsu universities' entrepreneurship education achievements, *2017 International Conference on Grey Systems and Intelligent Services (GSIS)*, 105-105,
<http://dx.doi.org/1109/GSIS.2017.8077679>.
- Závodská A., Šramová V., & Konečný V. (2019) Developing Entrepreneurship Education: Case of the University of Žilina. Em: Uden L., Liberona D., Sanchez G., Rodríguez-González S. (eds) *Learning Technology for Education Challenges. LTEC 2019. Communications in Computer and Information Science*, v. 1011. Springer, Cham.
https://doi.org/10.1007/978-3-030-20798-4_27
- Zhang, Y., Duysters, G. M., & Cloudt, M. M. A. H. (2014). O papel da educação para o empreendedorismo como preditor da intenção empreendedora de estudantes universitários. *International Entrepreneurship and Management Journal*, 10 (3), 623-641.