

Research Article

Entrepreneurial education in basic education: identifying challenges from a bibliometric analysis and systematic review

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Abstract

Objective: to analyze, in the Web of Science database, the scientific production on the theme "entrepreneurial education", in order to observe the literature panorama and the challenges inherent to the performance of entrepreneurship in Basic Education. **Methodology:** the study was divided into two parts: (1) analysis, through the bibliometrics technique, of the indicators related to the type of document, the authors and their nationality, and the number of citations; and (2) conducting a systematic, post-application review of the Proknow-C method. **Main results:** the number of studies with this educational approach is low and, in general, isolated cases are analyzed. The literature panorama reaffirms the thematic complexity and highlights two major and main challenges – school management and teacher preparation. **Theoretical/methodological contributions:** through the presented literary portfolio, it is possible to identify the complexity and heterogeneity of the challenges linked to the application of the entrepreneurial approach in Basic Education teaching institutions. **Relevance/originality:** this study exposes the development of research on entrepreneurship education in basic education, as well as the challenges associated with the implementation and development of this educational approach. **Social/management contributions:** the results of the study demonstrated the need for integration between the political, business, educational, family spheres and the support of society in general for the implementation and development of entrepreneurship in Basic Education.

Keywords: Entrepreneurship; Basic Education; Entrepreneurial Education; Bibliometrics; Systematic Review.

Resumo

Objetivo: analisar, na base de dados *Web of Science*, a produção científica sobre o tema "educação empreendedora", a fim de observar o panorama da literatura e os desafios inerentes à atuação do empreendedorismo na Educação Básica. **Metodologia:** o estudo foi dividido em duas partes: (1) análise, por meio da técnica de bibliometria, dos indicadores relacionados ao tipo de documento, aos autores e sua nacionalidade, e à quantidade de citações; e (2) realização de uma revisão sistemática, pós-aplicação do método Proknow-C. **Principais resultados:** é baixo o quantitativo de estudos com essa abordagem educacional e, em geral, é feita a análise de casos isolados. O panorama da literatura reafirma a complexidade temática e destaca dois grandes e principais desafios – a gestão escolar e a preparação dos professores. **Contribuições teórico-metodológicas:** pode-se, pelo portfólio literário apresentado, identificar a complexidade e a heterogeneidade dos desafios vinculados à aplicação da abordagem empreendedora nas instituições de ensino da Educação Básica. **Relevância/originalidade:** este estudo expõe como está o desenvolvimento de pesquisas sobre a educação empreendedora na Educação Básica, bem como os desafios associados à implementação e ao desenvolvimento dessa abordagem educacional. **Contribuições sociais/para a gestão:** os resultados do estudo demonstraram a necessidade da integração entre as esferas políticas, empresariais, educacionais, familiares e o apoio da sociedade em geral para a implementação e o desenvolvimento do empreendedorismo na Educação Básica.

Palavras-chave: Satisfação do franqueado. Redes de franquias. Relação franqueador e franqueado. Análise de Correspondência.

INTRODUCTION

The entrepreneurship education, in several countries around the world, including Brazil, has been recognized as one of the pillars of education by the United Nations Educational, Scientific and Cultural Organization (Unesco), which emphasizes its importance in the economic and social fields, a topic of discussion in the political, economic and academic agendas and debates of the United Nations (Lima *et al.*, 2015).

Lima *et al.* (2020), in an editorial of the Iberoamerican Journal of Entrepreneurship and Small Business (IJESB), highlight the lack and need for studies focused on entrepreneurial education (mainly in Brazil), addressing not only higher education, but other educational levels. This is relevant to comply with political actions and new pedagogical practices, such as the State Plan for entrepreneurial education, developed by the government of São Paulo, law 15,693 (2015), which established goals, with a date of compliance until 2024, for the implementation of entrepreneurship education from elementary school to professional education throughout state schools.

This study focuses on Basic Education which, according to the Law of Guidelines and Bases of National Education (LDB), law 9,394/1996 (Brasil, 1996), comprises the stages of preschool, elementary school, and high school, with free and mandatory offering of vacancies by the public sphere – a stage that constitutes a right guaranteed by the Federal Constitution (CF) and the Statute of the Child and Adolescent (ECA).

Dias and Mariano (2017), who attest to the importance of recognizing entrepreneurship as one of the pillars of education by Unesco, present the incentives, from 2006 onwards, from the Ministry of Education and the Coordination for the Improvement of Higher Education Personnel (CAPES) for undergraduate and graduate courses targeted at the development of Basic Education in Brazil.

The Brazilian Micro and Small Business Support Service (SEBRAE) deserves attention, in this sense, as it acts as one of the agents that most encourage the development of entrepreneurship education in Brazil, seeking partnerships both in public and private schools, through the Sebrae Center for Reference in Entrepreneurship Education (CER - Centro Sebrae de Referência em Educação Empreendedora), and courses such as Young Entrepreneurs First Steps (JEPP- Jovens Empreendedores Primeiros Passos) (Sebrae, 2020). As stated on the CER website (2020), as it represents a learning process, entrepreneurship can be stimulated from Elementary to Higher Education.

Minatel (2019) emphasizes that the educational role is not only a responsibility of the school but also of the parents. Minatel (2019) also approaches entrepreneurship education from early childhood, through guidelines and stimuli regarding the child's future. In the same vein, Almeida (2019) states education arises based on the social context, biological aspects, and people who are involved in this process, especially parents and family members. However, it is the school that develops the “improvement of the individual's abilities” (Almeida, 2019, p. 34), promoting scenarios that stimulate the development of business skills, professional performance, and situations rescuing ethical values, intrinsic to an individual, to prepare it for insertion in society (Marcovitch & Saes, 2018).

For Albuquerque *et al.* (2016), this educational approach is a strategic factor for promoting an entrepreneurial culture and

encouraging greater involvement of people in solving social problems, in an inclusive and ethical way.

According to Steiner (2006), quality in education is fundamental for the generation of knowledge (such as science, technology, and innovation), through which a country can improve its economy and social well-being. Therefore, Melo (2012) argues that a universalized and quality Basic Education, composed of innovative approaches, is the best way to promote the competitiveness and sustainable development of a nation.

Despite the growing discussions involving the relationship between education and entrepreneurship, gaps are identified, such as: the lack of a concept for entrepreneurship education (Matlay, 2008; Pepin & St-Jean, 2019); the practical heterogeneity (Sommarström *et al.*, 2020); and the failure to structure and implement public policies which often mask an educational innovation (Melo, 2012; Rossi, 2005; Steiner, 2006).

Dolabela (2003) proposes a didactic strategy, called Entrepreneurial Pedagogy, to assist the student of Basic Education in the construction of their structuring dream – one that can be achieved through actions. In this educational approach, intentionality, ethical posture, alignment with the national development agenda, and arrangement of social capital, among other factors, constitute concerns that need to be observed (see Dolabela, 2003, p. 129 to 136).

In agreement with the impacts that education promotes for society, and understanding that entrepreneurship education represents an approach stimulating the development of skills and abilities, resulting in protagonism, critical reflection, reasoning, creativity, living with oneself and with others, regardless of economic and political systems, this study is relevant because it seeks to contribute to the theoretical and practical development of this theme.

In this context, this research questions: how, in the literature, is this theme discussed, and what are the main challenges for entrepreneurial education in Basic Education? In agreement with the above, regarding the importance of this topic and its lack of studies, this article analyzed the scientific productions related to the topic of entrepreneurial education in Basic Education, contained in the Web of Science database, in order to present a literature overview and to identify the main challenges of its performance. Based on the studies found, a bibliometric analysis and a systematic review of the topic were carried out.

The discussions and challenges mentioned in this work may guide the development and implementation of entrepreneurship education in Basic Education schools not yet practicing it, and may identify possible improvements for those who have already started such an approach, not only in Brazil, but also in other countries.

For better understanding, the study was divided into interdependent sections: after this introduction, a brief theoretical foundation was presented, with the origins of entrepreneurship education and its approach in Basic Education; then, the methodological aspects were treated, with the description of the two stages of analysis – the bibliometric and the systematic; and the final considerations were presented.

It is noteworthy that a variety of nomenclatures were identified with the same meaning as the object of this study, which included: education for entrepreneurship (Albuquerque *et al.*,

2016) and entrepreneurial learning (Hietanen, 2015). The term “educação empreendedora” was chosen, which often translates the expression “entrepreneurship education”, used worldwide, according to Lackéus (2015).

THEORETICAL FOUNDATION

The teaching of entrepreneurship (such as the approach to the creation of small businesses) arose at Harvard Business School. In 1947, the first course in the area took place, with Myles Mace as a professor. Despite this milestone, Kuratko (2005) states that the school format dedicated to the subject has consolidated since 1970, with the proposal of a Master of Business Administration (MBA) in Entrepreneurship, by the University of Southern California, and academic research since 1980.

In Brazil, this course was promoted by Professor Ronald Degen, in 1981, at the School of Business Administration of São Paulo, Fundação Getúlio Vargas (FGV), and continues to be developed (Almeida, 2019), due to the existence of important programs, such as the Center for Entrepreneurship and creation of new businesses of FGV (FGVcenn) and Empretec, a course with focus on attitude, coordinated by Sebrae (Lavieri, 2010).

Entrepreneurship education originated and developed in higher business administration courses, as a practical need. However, there are still many conflicts, both on the part of professors, in the training of an administrator or an entrepreneur, and by professionals in education, in the qualification of an individual. There is still little discussion about the development of both skills (Almeida, 2019; Lavieri, 2010). Due to this problem, Lavieri (2010) suggests that entrepreneurship instructors seek to shorten this theme with education, promoting possibilities of joint action in the qualification of the individual.

The expansion of this thematic area, including academia, has short- and long-term purposes, because, according to Michels *et al.* (2018), encouraging entrepreneurship represents a public policy strategy for local economic growth, as it promotes the creation of new jobs and increases in productivity. Since 1982, Schumpeter (1982) has stated that innovation and business creation by entrepreneurs is the cause the economic development of countries.

Entrepreneurship education is increasingly being valued, as a result of the growing demands, on the part of companies, to respond to an increasingly globalized world, in which innovation is essential, in addition to a substantial increase in university graduates without guarantee of employment (Araujo & Davel, 2018; Lavieri, 2010).

There, is also, a distorted view of society on this topic, because an entrepreneur is not only someone who develops a business plan, there is a diversity of skills in development. Because of this, the content of entrepreneurship courses should not be treated isolated, but promoting interdisciplinarity (Lavieri, 2010).

Through a longitudinal study, Matlay (2008) observed the positive impact of entrepreneurship education on the professional performance of entrepreneurs, self-employed and students from universities and/or postgraduate courses focused on entrepreneurship. During the ten years of research, the participants always have work, and, after the studies of entrepreneurship, they improved their self-assessment of business skills and capacities.

In the context of Basic Education, in addition to business, most studies address aspects, such as skills development (creativity, extroversion, openness to new experiences, among others) that guide the individual's future, as a responsible citizen and protagonist of their life. In this sense, for Barbosa *et al.* (2020), when this approach is implemented in Elementary and High Schools, it impacts personality traits focused on the intention to undertake a new venture.

In this way, entrepreneurship education goes beyond business spheres, as stated by Lavieri (2010, p. 4): “*all education aimed at social development could also be considered an education for the development of the entrepreneurial attitude*”. It is not only about teaching how to found a company or innovate, but how to build skills required for the future.

It is understood that entrepreneurial education can impact the business vision, in any of the stages of the individual's education, whether before, during or after he becoming an entrepreneur, as stated by Matlay (2008), or in the construction of a child's dream, as Dolabela (2003) proposes. Both conceptual bases are complex because they involve education and entrepreneurship.

According to Guimarães and Lima (2016, p. 46), entrepreneurship education now represents “*a methodological and ontological process that allows a diversity of pedagogical practices to the teacher*”. A great diversity of ways of acting with this educational approach was described in the systematic analysis of this study.

When presenting about the educational process in Finland, Almeida (2019) states that, to obtain satisfactory results with entrepreneurship education, in addition to the performance of teachers, students, and community, it is necessary to engage other professionals who represent the educational institution, such as principals and pedagogues, for example. According to Lavieri (2010), education is a cultural and structural process, representing not only the content taught in schools, but also behavioral aspects focused on the ethics and social values of the human being.

Much of formal education (including schools, curricula, colleges, courses, seminars, congresses, among others) is still mechanistic and encourages students to memorize content to conduct an assessment, contradicting the critical thinking needed for the formation of a citizen. Zamberlan *et al.* (2020, p. 46) add that formal education “*does not involve the student in a broad socio-historical-cultural context*”. Unlike this conjuncture, DeAquino (2007) states that, in the proposal of self-directed learning, one of the methodologies used in entrepreneurship education, the focus is on the process, represent the development of the individual, and not on its content. It can be observed that the traditional model of education creates limited people, based on insecurity. Due to this:

... it is necessary that educators undertake in education [...], innovate their practices, rescue the connection with the soul, and can find new ways to hold the attention of their students (Minatel, 2019, p. 19).

In Brazil, the stimulus for acting with this educational approach, from Basic Education, can be observed between the lines of the document that promotes the direction of educational

institutions to make competencies of young people, the Common National Curriculum Base (BNCC - Base Nacional Comum Curricular). This document is defined as:

... set [...] of learnings all students must develop throughout the stages and modalities of Basic Education, so they have secured their learning and development rights.

In the BNCC (2018), there are competencies that must be developed in Basic Education, which will promote knowledge, skills, attitudes and values summarized below: (1) create a fair and inclusive society; (2) stimulate curiosity, investigation and reflection to solve problems; (3) value the various artistic and cultural manifestations; (4) use different languages to express and share information; (5) understand, use and create digital information and communication technologies in a critical, meaningful, reflective and ethical manner; (6) value the diversity of knowledge and cultural experiences; (7) argue, based on facts, data and reliable information, and act with socio-environmental awareness; (8) take care of physical and emotional health; (9) exercise empathy, dialogue, conflict resolution and cooperation; and (10) act personally and collectively with autonomy, responsibility, flexibility, resilience and determination.

According to Dolabela e Fillion (2013, p. 135):

... the education system is too focused on knowledge transfer and not sufficiently focused on learning independent methods of imaginative thinking.

Thus, the question is about the possibility the traditional teaching method develop the necessary skills and attitudes in the student, mentioned by the BNCC. Kuratko (2005) exposes the need to verify in "what" and "how", in fact, the entrepreneurship education can help a future professional or entrepreneur. Therefore, the necessary theoretical bases must be analyzed, as well as finance, risks, strategies, types, methods of entrepreneurship, and behavioral aspects, which are also part of the contents of this educational approach.

There are underdeveloped subjects in the scope of entrepreneurial education, such as linguistic intelligence, which, for Gardner (2005), is essential in business, as well as the proposal of andragogy, which guides adult learning, focusing on discoveries and reflections, an idea also defended by Dolabela (2011). Lavieri (2010, p. 15) adds the teaching of ethical and moral standards as very important for the development of the entrepreneur, since:

... a person responsible for the construction of a drug distribution scheme may have the necessary attitude to classify it as a very successful entrepreneur, but, [...] something went wrong in their formation.

If, in Brazilian colleges/universities, there is already an entrepreneurship education rooted in bureaucratic concepts and processes, in Basic Education schools, this reality can be more alarming, given the fact that there is no interest in promoting experiences of this type in the classroom (Lavieri, 2010). It is possible to visualize a distance between school and society in Brazilian educational, at a basic level, which needs to be overcome

to implement entrepreneurial education and develop characteristics of the entrepreneurial attitude in young people, such as "autonomy and creativity" (Leite, 2018, p. 11).

Testimonials from entrepreneurs to students, environmental analysis, and practices through the creation of projects, simulations, case studies, and technical visits are methods associated with entrepreneurship education (Kuratko, 2005). Under the view of Leite (2018), a materially equipped school is not enough to stimulate and implement entrepreneurship in teaching, the context of education at the global and national level should be considered, mainly for political direction and content production. The search for qualification of education professionals, lack of formal programs, lack of solid theoretical bases and failure to compromise the educational institution are some challenges identified by Kuratko (2005), for the implementation of entrepreneurship education.

It was possible to observe that entrepreneurship education has been studied by several authors, given its importance for the strengthening of entrepreneurship, considered a "phenomenon" that enables the economic and social development of a country (Silva & Pena, 2017), in addition to being a topic associated with multiple views, as it involves technical and behavioral aspects, as exposed in Fayolle's study (2002).

In this sense, this research, composed of two stages, will provide a broader vision, through the panorama and identification of challenges of entrepreneurship in Basic Education, especially at the fundamental level, where several situations were found in several countries.

METHODOLOGICAL PROCEDURES

This article employed a bibliometric survey of scientific research on entrepreneurship education in Basic Education (Child, Elementary and High School) and a systematic review of the articles, classified by the Proknow-C method, in order to present an overview of the theme and identify the main challenges of its implementation (Ensslin et al., 2010).

This research is classified as: exploratory, as it covers an area in which there is little accumulated and systematized knowledge (Vergara, 2009); and descriptive, for presenting a structured review of data collection in the literature (Gil, 2018), and for writing the characteristics of the publications of the bibliographic portfolio.

Regarding its nature, it is a theoretical-illustrative research, which presents: a process, through a oriented guide, to find the portfolio that was part of the bibliometric analysis (Step 1); and a systematic review (Step 2) (Ensslin et al., 2013), both detailed in the next section.

This research was based on secondary data, with a quantitative and qualitative approach, by means of the bibliometric analysis and the systematic review of the documents selected by the Proknow-C method, respectively (Hair et al., 2005; Richardson, 2008).

Data Collection

The data for this research were collected in Web of Science database of the Institute for Scientific Information (ISI), available on the CAPES portal, chosen because it is a multidisciplinary,

indexing only the most cited journals in their respective areas and meeting the Social and Exact Sciences (Johan et al., 2018; Vieira et al., 2017). In order to fulfill the objectives of this study, a search was made for documents in the Web of Science database, with terms that represent "entrepreneurship" and "Basic Education", defined from the search of two sets of keywords, which obtained 98 and 102 documents, respectively, being:

- (1) ("educat*" OR "form*" OR "teach*" OR "instruc*" OR "know*") AND ("entrepreneur*" OR "new business" OR "intrapreneur*") AND ("basic education" OR "regular educacion" OR "kindergarten" OR "elementary school" OR "high school" OR "initial formation");
- (2) ("entrepreneur*" OR "new business" OR "intrapreneur*") AND ("basic education" OR "regular educacion" OR "kindergarten" OR "elementary school" OR "high school" OR "initial formativo").

Due to similarity, the second set of terms was adopted, since it covered the proposed Basic Education cut, and encompassed a greater amount of documents. Thus, of the 102 results found on May 30, 2020, a selection was made, after reading titles (and abstracts, if there were doubts), thus classifying 54 documents for bibliometric analysis (Step 1).

Subsequently, the Proknow-C method was applied, it "aims, above all, to enable the researcher to gather a portfolio with scientific recognition and relevance to the subject of interest" (Linhares et al., 2019, p. 56), relevant to the purpose of this work. The procedure in question ranks documents and authors most cited, most recent, and most in line with the abstract. Thus, 12 documents were selected for the systematic review of this study (Step 2).

It is noteworthy that, in the search, there was no type of filter regarding years, nationality, type of document, among others. Thus, documents from 1994 to 2020 were found. To carry out the steps described and obtain the quantitative data, an Excel spreadsheet was used; and, for the identification of clusters and the construction of the image with the main keywords that composed the bibliometric analysis, the VOSviewer software was employed.

Data Analysis

The data found in this study were analyzed in two stages: (1) the quantitative description of the findings, as a strategy for the bibliometric data generated by the research; and (2) the appreciation of qualitative data, using the content analysis technique. Thus, indicators were sought that would allow the interpretation of messages (Bardin, 2016) – which resulted in the categorization of the challenges inherent to the performance of entrepreneurship in Basic Education, which are included in the Section "Systematic Analysis".

In the first stage of the study (bibliometric analysis), was to descriptively analyze the types of documents, the number of citations by authors, the nationality of the authors, the groups of authors with different nationalities, the keywords and the journals. In the second stage (systematic review), in turn, two categories of analysis began to identify the challenges of entrepreneurship education in Basic Education: internal or controllable aspects by educational institutions; and external or

non-controllable aspects. The elements of these categories were identified after the systematic analysis of the data.

It is worth mentioning that the categories mentioned above were adopted by inference of the theoretical foundation, from the conception that entrepreneurship education, when implemented in the educational institution of Basic Education, will act with internal and external, tangible, and intangible resources and factors: people, materials, knowledge, among other variables, which may represent a challenge for this institution. In this study, the term challenge is interpreted as a factor of fragility and relevant complexity.

RESULTS

Bibliometric Analysis

Moran et al. (2010, p. 69) elucidate how bibliometric analysis is important for the "advancement of knowledge" on the researched subject, "which makes it an important ally in the development of new ideas, concepts, and perspectives of approaches".

The portfolio of this analysis had 54 documents, after searching the Web of Science database, aligned by title and/or abstract, and related to the subject "entrepreneurship in Basic Education", as described in the methodology. From this portfolio, documents of several types were identified: 27 proceedings papers (articles in conference proceedings), 26 articles, and a literature review; and 127 authors, most of whom have only one published document, with the exception of Lenita Hietanen, from the Faculty of Education, University of Lapland, in Rovaniemi, Finland, with three publications.

Below (Table 1), the aforementioned group of authors were arranged in descending order, based on the number of citations of their works, the most mentioned being Dilani Jayawarna, Oswald Jones and Allan Macpherson, with 45 citations of only a written document entitled Entrepreneurial potential: The role of human and cultural capitals, published in 2014 in the International Small Business Journal: Researching Entrepreneurship.

Table 1
List of authors with the highest number of citations

Id	Authors	Documents	Citations
52	Jayawarna, D.	1	45
55	Jones, O.	1	45
68	Macpherson, A.	1	45
54	Joensuu-salo, S.	1	25
114	Varamaki, E.	1	25
116	Viljamaa, A.	1	25
60	Komulainen, K.	1	23
62	Korhonen, M.	1	23
90	Raty, H.	1	23
47	Hietanen, L.	3	19
51	Järvi, T.	1	12

Note: Elaborated by the authors based on bibliometric data (2020).

The nationalities of the authors who published on entrepreneurship in Basic Education were also verified in the Web of Science database. Publications in 28 countries were identified: Finland, with nine documents, followed by Indonesia, with eight, and the United States of America (USA), with five. Brazil, England, Mexico and Portugal are in the same position in relation to the number of documents, differing only in the number of citations (Table 2).

Table 2
Nationality of authors found in at least three documents

Id	Countries	Documents	Citations
10	Finlândia	9	72
13	Indonésia	8	3
28	EUA	5	48
3	Brasil	3	0
8	Inglaterra	3	46
16	México	3	5
21	Portugal	3	1

Note: Elaborated by the authors based on bibliometric data (2020).

There are only three groups of authors with different nationalities who carried out the study together. They were classified into: Cluster 1 – United States and England; Cluster 2 – England, Morocco and Malaysia; and Cluster 3 – Finland and Turkey. Analyzing these data, it is clear that joint research by authors from different countries is not common. Table 3 shows the articles linked to clusters 1, 2 and 3.

Table 3
Documents relating to clusters by countries

Id	Authors	Title	Countries
Cluster 1	Jayawarna, D.;	Entrepreneurial potential:	Inglaterra and EUA
	Jones, O.;	The role of human and	
	Macpherson, A.	cultural capitals	
Cluster 2	Ahmad, A. M.;	Work-based learning: an	Malásia, Marrocos, and Inglaterra
	Hussain, K.; Ekiz, E.;	approach towards	
	Tang, T.	entrepreneurial advancement	
Cluster 3	Deveci, I.; Seikkula-Leino, J.	A Review of Entrepreneurship Education in Teacher Education	Turquia and Finlândia

Note: Elaborated by the authors based on bibliometric data (2020).

Of the 54 documents that make up the portfolio of this bibliometric analysis (Table 4), three are instituted by Brazilian authors, and of these, only one was published in a Brazilian journal – “Educar em Revista” (highlighted), by Marflia Pinto de Carvalho (2018).

Table 4
Autores brasileiros

Id	Authors / Year	Title	Journal/Proceedings
5	Silva, J. B., Silva, I. N. e Bilessimo, S. 2020	Technological Structure for Technology Integration in the Classroom, Inspired by the Maker Culture	Journal of Information Technology Education-Research
17	Carvalho, M. P. 2018	Elementary Teachers and the Payment of Bonus per Results: Case Study on Public Schools of São Paulo	Educar em Revista
76	Pires, A. A. M. e Gomes, C. M. A. 2014	Synergy Among Entrepreneurial Education, Projects Methodology and Metacognition	Inted2014: 8th International Technology, Education and Development Conference

Note: Elaborated by the authors based on bibliometric data (2020).

225 different keywords were identified, but only those that appeared at least three times in the documents under analysis were selected (Figure 1). Thus, 14 words were classified, with emphasis on “Entrepreneurship education”, in 12 documents; and “Entrepreneurship”, in 11 documents (Table 5).

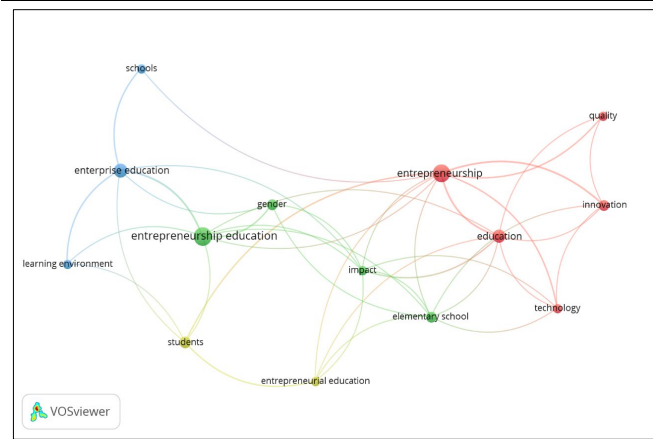


Figure 1
Most found keywords

Note: Elaborated by the authors based on bibliometric data (2020).

Table 5
List of the most used keywords

Id	Keyword	Occurrences
76	Entrepreneurship education	12
74	Entrepreneurship	11
63	Enterprise education	7
56	Education	6
191	Students	5
60	Elementary school	4
89	Gender	4
98	Innovation	4
68	Entrepreneurial education	3
93	Impact	3
111	Learning environment	3
162	Quality	3
171	Schools	3
207	Technology	3

Note: Elaborated by the authors based on bibliometric data (2020).

In the portfolio of this bibliometric analysis, 48 journals were found, with only four with more than one document (Table 6).

Table 6
Journals found with more than one documents

Id	Journal/Proceedings	Quantity
1, 57, 64 e 65	Education and Training	4
68 e 69	Journal of Enterprising Communities-people and Places in the Global Economy	2
43 e 44	Proceedings of the 9th International Conference for Science Educators and Teachers (icset 2017)	2
75 e 76	Inted2014: 8th International Technology, Education and Development Conference	2

Note: Elaborated by the authors based on bibliometric data (2020).

It is worth noting that the search found the article “Elementary-school Curricula and Urban Transformation”, by Paul Skilton Sylvester, published in 1994 in the “Harvard Educational Review”. After that, only from 2009 onwards there were new publications selected, with emphasis in 2018 as the year with the highest quantity – 13 publications.

Although Sylvester's article (1994) is not either seminal in the area or directly related to the term “entrepreneurship education”, it is relevant, consistent with the topic, and stands out in terms of number of citations. Therefore, it was selected for the second stage of this study, described below.

Systematic Analysis

Considering the objectives guiding the development of this study, among the articles selected by the Proknow-C method, this paper sought to present an overview and identify the challenges marking entrepreneurship education in Basic Education.

The post-application of the method, as described in the methodology, selected 12 articles considered more relevant (Table 7), which were read and analyzed. They deal with entrepreneurship in Basic Education in various ways, always based on the subject emphasizing student development, in the role of teacher, the school and family members.

It was noted, then, that Finland was one of the first countries in Europe to adopt entrepreneurship in education, from the child level to the higher level, which justifies a greater number of documents found - nine, in the bibliometric analysis, and 50% from the portfolio of this systematic review (Hietanen, 2015; Hietanen & Ruismaki, 2016; Korhonen et al., 2012; Rönkkö & Lepistö, 2015; Sommarström et al., 2020).

Regarding the basic level, the country adopts a transversal approach called "*participatory citizenship and entrepreneurship*", which can be applied in all disciplines (Hietanen & Ruismaki, 2016, p. 833). However, situations were also found in several other countries, such as the USA, England, Canada, Mexico and Wales.

Before specifying the challenges encountered, a synthesis of the analyzed articles was made, a sine qua non condition to a broader view of the performance of entrepreneurship education at the basic level, since this educational approach aims to (Rönkkö & Lepistö, 2015, p. 61):

... help the student understand the importance, work, and needs of the school community, the public sector, the business world, and organizations from the perspective of a functioning society.

Through a project called "Sweet Cakes Town", Professor Sylvester (1994) demonstrated the possibility to educate critically, to improve social aspects, necessary for the time, in Philadelphia (USA), after deindustrialization during the 1970s and 1980s, where many students received public assistance.

In this project, the students created a dynamic and economically active city, with challenges like those encountered in the neighborhood where they lived. The teacher encouraged students to reflect on the situation in search of a solution to solve problems realistically, through visits to the neighborhood and to companies. The research question that led this study was "How can we teach children in a way to not simply replicate existing social inequalities?" (Sylvester, 1994, p. 324). After the project, the author answers this question, suggesting:

Create opportunities for repeated and meaningful applications of academic skills [...] provide opportunities for students to imagine themselves in new roles [...] help students divorce from academic success of acting like white [...] allow students to take proactive attitudes towards those in power [...] create curricula considering reality as something to be questioned and analyzed [...] create opportunities for students develop strategies and hope to overcome barriers to economic success in the mainstream [...] offer opportunities for students to experience social structures as impermanent and changeable for the benefit of the people living within them.

This performance, in part, is corroborated by the study by Korhonen et al. (2012) on entrepreneurial education and entrepreneurship not being only connected to economic issues, but also to social values, such as community welfare, democratic participation, empowerment, and reduction of social exclusion. These authors defend the idea that this educational model "reflects a neoliberal mentality of governance, which aims to

Table 7
Articles selected by the Proknow-C method

Id	Authors	Title	Year	Study focus
102	Sylvester, P. S.	Elementary-School Curricula and Urban Transformation.	1994	Projeto educacional com foco na mudança de estruturas sociais.
86	Korhonen, M., Komulainen, K., e Raty, H.	Not Everyone is Cut Out to be the Entrepreneur Type: How Finnish School Teachers Construct the Meaning of Entrepreneurship Education and the Related Abilities of the Pupils.	2012	A percepção de professores e a identificação de diferentes caracterizações da educação empreendedora, utilizando o conceito de empreendedorismo interno e externo, e a análise dos discursos quanto aos aspectos de gênero, governança e neoliberalismo.
71	Jayawarna, D., Jones, O. e Macpherson, A.	Entrepreneurial potential: The role of human and cultural capitals.	2014	Os capitais humano e cultural no potencial empreendedor, e a atuação na educação empreendedora.
68	Hietanen, L. e Järvi, T.	Contextualizing entrepreneurial learning in basic and vocational education.	2015	Aprendizagem empresarial na educação básica e no ensino profissionalizante.
65	Hietanen, L.	Entrepreneurial learning environments: supporting or hindering diverse learners?	2015	Construção do ambiente de aprendizagem com a abordagem empreendedora na educação básica, conforme a autoavaliação de alunos da educação básica, e entrevista com professores em formação.
69	Rönkkö, M. L. e Lepistö, J.	Finnish student teachers' critical conceptions of entrepreneurship education.	2015	A percepção de professores em formação quanto à abordagem empreendedora no Ensino Básico.
57	Hietanen, L. e Ruismaki, H.	Awakening students' entrepreneurial selves: case music in basic education.	2016	Estímulo à reflexão do "eu empreendedor", em disciplina não específica.
37	Cárcamo-Solís, M. L., Arroyo-Lopez, M. P., Alvarez-Castanon, L. C. e Garcia-Lopez, E.	Developing entrepreneurship in primary schools. The Mexican experience of "My first enterprise: Entrepreneurship by playing".	2017	Importância dos recursos para o empreendedorismo, demonstrado em projeto de educação empreendedora com crianças no nível básico.
11	Pepin, M. e St-Jean, E.	Assessing the impacts of school entrepreneurial initiatives A quasi-experiment at the elementary school level.	2019	Impactos da educação empresarial nas atitudes empreendedoras dos alunos.
14	Whitlock, A. M.	Elementary School Entrepreneurs.	2019	Projeto educacional, com foco no conhecimento econômico e desenvolvimento do senso cívico das crianças.
2	Ahmad, A. M., Hussain, K., Ekiz, E. e Tang, T.	Work-based learning: an approach towards entrepreneurial advancement.	2020	Abordagem baseada no trabalho e em benefícios da educação empreendedora.
1	Sommarström et al.	Entrepreneurship education – paradoxes in school-company interaction.	2020	Paradoxos práticos da educação empreendedora – ocorrentes, organizacionais, obstrutivos e inspiradores.

Note: Elaborated by the authors based on bibliometric data (2020).

transform passive citizens [...] in active entrepreneurs", based on ethics and commitment to themselves and society, with the possibility of potentiating their sense of self-direction (Korhonen et al., 2012, p. 4). To this end, they classify two types of entrepreneurial education: (1) internal, based on the development of skills, capacities, and attitudes in school, creating an ethical and conscious citizen; and (2) the external, directed to business aspects, such as economic knowledge, audacity, stimulating competitiveness, and the ability to take risks.

Korhonen et al. (2012) also perform a critical analysis of teachers' discourses, and identify gender traits, in profiles considered external entrepreneurs, demonstrating the cultural understanding around masculinity (this is also addressed in the theoretical context of Pepin and St-Jean, 2019). Through this analysis, the authors detected that the preparation of students to become entrepreneurs is beyond the domains of Basic Education, suffering influence "from the family, homes, as well as from the psychological facts of development" (Korhonen et al., 2012, p. 14).

Based on these diverse influences that build an individual's profile, Jayawarna et al. (2014) approach the concept of: (a) human capital – set of knowledge and acquired skills, mainly through resources built on education and the particular experience of each individual; and (b) cultural capital – which represents the value of education, passed on from generation to generation.

After analyzing longitudinal data regarding individuals, from birth to adulthood, Jayawarna et al. (2014) confirmed human capital influences entrepreneurship years before it happens. Basic Education stimulates the development of entrepreneurial skills, facilitating the business creation process. The authors highlight the importance of professional experience, right after or during high school, because employment helps to develop very important and stimulating lasting relationships in the process of entrepreneurship.

Besides Korhonen et al. (2012) and Rönkkö e Lepistö (2015) also investigated teachers, but still in the process of training (teacher-student), who attended the mandatory module of "Entrepreneurship and Education for Citizenship" (Rönkkö & Lepistö, 2015, p. 65). Regarding the approach to entrepreneurship education, the results presented show that 90% of the teachers-students exposed positive aspects, identifying challenges and questions they would face, such as: the constant encouragement and incentive transmitted to the student; the planning and arrangement of problem situations to challenge them to seek solutions; the denomination "entrepreneurship education", which is not just about business, but the development of a set of skills that make children and young people thinking citizens and protagonists of their lives, in addition to their moral and ethical development. For the other teacher-students (10%), entrepreneurship education should not be part of the school environment, as it is a political interest, a stimulus to neoliberalism and capitalism, which emphasizes competition and disunity between children and young people (Rönkkö & Lepistö, 2015).

On the other hand, the study by Hietanen and Järvi (2015) proves that the entrepreneurial approach can be initiated in disciplines that are not business-focused, in a more methodological way, in view of the development of skills considered entrepreneurial cited by Hietanen and Järvi (2015), as

to take risks, creativity, decision-making, among others. For the authors, the implementation of this approach, even before the performance in business, contributes to the development of skills and improvements regarding the decision to undertake or not in the future.

Based on the analysis of the entrepreneurial skills, Hietanen (2015) conducts a research with students of optional discipline of music, in Basic Education, and with university professors in training, also of music, demonstrating that the entrepreneurial approach can be applied to any subject and audience. In this case, both research objects work in learning environments that are representative of the sum of physical space and psychological and social factors. As a result, the students' reflection was highlighted as an inclusive practice, essential for the development of entrepreneurial skills from childhood, such as knowing how to deal with risks and solve problems. About teachers, it is important to "encourage students to learn by making and with their own mistakes, taking risks and solving problems creatively [...] according to their own needs" (Hietanen, 2015, p. 516).

Also in this sense, Hietanen and Ruismaki (2016) deal with the Finnish National Board of Education (FNBE), the Finnish National Board of Education, subordinate to the Finnish Ministry of Education and Culture (see also Whitlock, 2019), that outlines the guidelines in entrepreneurship education, revealing how one of its basic principles allow each student to decide their own goal, according to their needs and interests, stimulating the search for the "entrepreneurial self" in 15-year-old children, in the optional discipline of music in basic education.

The importance of resources for entrepreneurship in education was cited in the theoretical context of the studies of Hietanen and Ruismaki (2016), Jayawarna et al. (2014), Korhonen et al. (2012), Sommarström et al. (2020) e Whitlock (2019). Nesse sentido, Cárcamo-Solís et al. (2017) demonstrate, based on the implementation of an educational subproject by the government of Mexico in a Higher Education institution, the importance of resources – funds for the production and marketing of products, and the monitoring of tutors and counselors – for the initiative be successful. The relationships built through a partnership between the government, higher education institution, community, school, family members, companies, among others, helped in the process. It was then found that "children can be entrepreneurs and can open, operate and close a small business in the short term, thanks to the experience transmitted by tutors and counselors" (Cárcamo-Solís et al., 2017, p. 303).

Similarly, Whitlock (2019) describes a project conducted with Primary School children in Michigan (USA), receiving economic knowledge and encouraged to manage their business, with the purpose of meeting a local need – combating child abuse and to the problem of homelessness in adolescence. Through this experience, students developed their sense of civic effectiveness and learned about the importance of financial resources (loans and microfinance) for entrepreneurs, especially at the beginning of a business, in addition to other content related to economy, such as revenues, expenses, profits and risk management.

Also through the study of the implementation of a project, Pepin and St-Jean (2019) evaluated the impact of entrepreneurship education on the attitudes of students aged 10 to 12 years old, who study in French-speaking primary schools in

the province of Quebec. (Canada). A small experiment was carried out with a test group participating in an entrepreneurial project, besides another non-participating control group. Although no significant differences were noticed between the groups, a possible stimulus to the variables was observed: leadership, creativity, performance and personal control. The results suggest that, for the development of entrepreneurial attitudes, greater school engagement and government incentives are necessary, that is, participation in a project is not enough.

In this sense, Sommarström et al. (2020), through interviews with teachers and principals of several schools in different parts of Finland, present practical paradoxes of entrepreneurship education, demonstrating the lack of action by both the board and teachers. This reinforces the relevance of company-school and board-teacher partnerships for the acquisition of resources and the adoption of entrepreneurial education, when it is intended to offer a practical vision for students (Sommarström et al., 2020).

Addressing the content of entrepreneurship in Basic Education in a different way, Ahmad et al. (2020) explain the work-based approach and its benefits for companies, participating students, institutions and mentors, with an emphasis on the personal, professional and social development of those involved. To this end, cases of schools in Wales and Ohio (USA) are exposed which, since elementary school, have implemented projects, in partnership with companies, for students to solve problems, providing improvements for and promoting entrepreneurial skills. In many moments, the authors compare traditional teaching with the implementation of

entrepreneurial education: while the former inhibits creativity, innovation and personal and professional development; the second proposes challenges, glimpses the reality, and:

... allows young community members to become better thinkers and developers of innovative processes and products. This can only serve to strengthen economies, improve communities, and improve lives (Ahmad et al., 2020, p. 134).

After description and analysis of the articles, it can be seen that, when it comes to its implementation in Basic Education, entrepreneurship education involves internal and external aspects to the educational institution, demonstrating the thematic complexity, cited in the theoretical foundation (Dolabela, 2003; Matlay, 2008). Thus, it was possible to identify the challenges, as categorized adopted (Table 8), segmented by authorship of the portfolio of this systematic review.

The challenges, identified in the reviewed literature, range from the implementation of the entrepreneurship educational approach to its maintenance and development, including controllable and non-controllable aspects by the Basic Education teaching institution. This suggests greater attention to the factors listed above (Table 8), so that institutions can act more efficiently and effectively, if they choose to include entrepreneurship education as one of its educational proposals.

The choice of entrepreneurial performance at the basic level of education is not as simple as it seems, because countries that have been working with this educational approach for decades, like Finland, do not yet have an institutional standard in

Table 8
Challenges of entrepreneurship education in basic education

Categories	Challenges or identified elements	Authors
Internal or controlable aspects of institutions	Role of the board and school management;	Ahmad et al. (2020), Korhonen et al. (2012) e Sommarström et al. (2020)
	Promoting entrepreneurial culture within the school;	Cárcamo-Solís et al. (2017) e Hietanen (2015)
	Planning the execution of entrepreneurial activities and projects;	Ahmad et al. (2020), Cárcamo-Solís et al. (2017), Hietanen e Järvi (2015) e Sylvester (1994)
	Teacher preparation – qualifications;	Cárcamo-Solís et al. (2017), Hietanen, (2015), Hietanen e Järvi (2015), Hietanen e Ruismaki (2016), Korhonen et al. (2012), Pepin e St-Jean (2019), Rönkkö e Lepistö (2015), Sommarström et al. (2020), e Whitlock (2019)
	Creating a learning environment;	Hietanen (2015), Hietanen e Järvi (2015)
	Inclusive approach to education and moral and ethical values adopted by the educational institution;	Hietanen (2015) e Korhonen et al. (2012)
External or non-controlable aspects of institutions	Dynamic view of knowledge.	Ahmad et al. (2020), Hietanen e Ruismaki (2016), e Sylvester (1994)
	School cooperation with companies;	Ahmad et al. (2020), Cárcamo-Solís et al. (2017), Rönkkö e Lepistö (2015), Sylvester (1994) e Sommarström et al. (2020)
	Different conceptions of entrepreneurship and/or entrepreneurship education;	Hietanen e Järvi (2015), Hietanen e Ruismaki (2016), Korhonen et al. (2012), Pepin e St-Jean (2019), Rönkkö e Lepistö (2015).
	Several possibilities of action of entrepreneurship education;	Cárcamo-Solís et al. (2017), Hietanen (2015), Hietanen e Ruismaki (2016), Pepin e St-Jean (2019), Sommarström et al. (2020) e Whitlock (2019)
	Provision of resources for entrepreneurial performance in the school;	Cárcamo-Solís et al. (2017), Hietanen (2015) Jayawarna et al. (2014)
	Relationship networking;	Cárcamo-Solís et al. (2017), Hietanen (2015), Rönkkö e Lepistö (2015), Sommarström et al. (2020) e Sylvester (1994).
	Interaction with the community;	Ahmad et al. (2020), Cárcamo-Solís et al. (2017), Rönkkö e Lepistö (2015), Sylvester (1994), e Whitlock (2019)
	Government guidance and encouragement;	Ahmad et al. (2020), Cárcamo-Solís et al. (2017), Hietanen e Ruismaki (2016), Pepin e St-Jean (2019) e Rönkkö e Lepistö (2015)
	Student motivation;	Ahmad et al. (2020), Cárcamo-Solís et al. (2017), Hietanen e Ruismaki (2016) e Jayawarna et al. (2014)
Cultural understanding of entrepreneurship;	Korhonen et al. (2012)	
Family context.	Jayawarna et al. (2014) e Whitlock (2019)	

Note: Elaborated by the authors based on bibliometric data (2020).

which various practices and results are observed, according to with the educational institution and the professionals who lead this process, mainly teachers. It is also observed the constant search for partnerships between institutions, community, local companies, government, and family, so, together they promote truer learning situations, provoking a systemic analysis with students, in order to enable them to experience challenges capable of developing the learning of entrepreneurial skills, through disciplines or through methods and projects.

The incentive for students to seek new solutions and to make the most of the challenges proposed is often from the teachers' own motivation. Therefore, the training and motivation of these professionals impact directly the success of the educational approach. It is known that resources, in a broad vision (tangible and intangible), such as materials, equipment, labor, partnerships, among others, are also fundamental to an efficient entrepreneurship education.

On the other hand, as presented by Minatel (2019), not only the school is responsible for the education of a child, but also the family (especially parents). Thus, the family context will also impact on the success of this educational approach because it is not useful for the educational institution to act with incentives to entrepreneurial skills, if, at home, parents promote an action focused on traditionalism, through the disincentive to creativity and facilities to solve challenges, for example (Minatel, 2019).

Finally, it is deductible that, when choosing the implementation of entrepreneurship education, the basic education institution should be aware of the challenges it may face. Given this, strategies can be implemented to minimize possible problems and promote knowledge and the search for improvements, based on internal and external factors, such as: preparation of an action plan for the implementation of entrepreneurship education; preparation of all education professionals and employees of the institution regarding the standardization of the concept will be adopted for the development of such approach; creation of collaborative networks between participating actors; alignment and methodological possibilities among teachers; strategies and dynamics for community engagement; updating of political-pedagogical projects aligned with the educational approach; creation of structures promoting dynamism, interaction, and integration among students.

FINAL CONSIDERATIONS

In the first stage of this study, the bibliometric analysis was performed for the characterization of the number of publications, the documents aligned with the title entrepreneurship in Basic Education (available in the chosen database, Web of Science), as well as the authors who published the most in this subject, their nationalities, the most frequently found keywords and the most frequent journals.

Based on the analysis of these categories, the small amount of research published on this subject in the context of Basic Education is confirmed (Cárcamo-Solís et al., 2017, Hietanen, 2015, Hietanen & Järvi, 2015, Hietanen & Ruismaki, 2016, Jayawarna et al. 2014, Rönkkö & Lepistö, 2015). This fact was also verified through a survey carried out on the same day of the research in the database (May 30, 2020), in which, if the terms

related to Basic Education were not inserted, the result would be 30,797 documents. In this way, it is believed there is a need to develop more research related to entrepreneurial education in Basic Education, as Lima et al. (2020), point out, not only theoretically, but applied, to promote direct impacts on society.

It was also noticed the lack of partnerships between authors from different countries, which constitutes a limiting factor for the development of this field of study, as pointed out by Sommarström et al. (2020). For the implementation of an educational approach such as entrepreneurial education, the search for partnerships represents a continuous effort, an action for the formation of an entrepreneurial culture. This explains the prominence of this variable, as the academy could contribute more effectively if it met the needs of its community, favoring not only social and economic development, but mainly that of individuals.

In the second step of the study, a Systematic Review of the articles selected by the Proknow-C method, was carried out, which allowed the fulfillment of the objectives of this article, describing the literature panorama and identifying the challenges faced by entrepreneurship education in Basic Education, categorized as internal /controllable, or external/non-controllable by educational institutions.

These challenges demonstrate the breadth of such approach, as already presented by Minatel (2019), reinforcing that it is not just a responsibility of the school. They should guide the development of entrepreneurship education, through the search for internal resources (qualification of professionals from educational institutions, materials and equipment for carrying out projects, for example) and external resources (such as partnerships with companies and the community), in addition to the importance of promoting an entrepreneurial culture, which will involve government policies and the support of the whole society. "Different conceptions of entrepreneurship – narrow or broad – lead to different types of learning among students" (Pepin & St-Jean, 2019, p. 6). Thus, entrepreneurship education in Elementary and High School cannot be implemented randomly.

It was possible to observe the strong incentive of political spheres in some countries, such as Finland (since 1994) (Hietanen & Ruismaki, 2016); Canada (since 1980) (Ahmad et al., 2020); and Wales (since 2010) (Pepin & St-Jean, 2019). Despite this fact, there are variations according to the context of the agents involved in this process, especially teachers and school managers, which hinders both their practical development and academic research.

In view of the above, it is observed that the heterogeneity between countries and even between educational institutions does not represent a failure or a negative factor, it seems that the greater concern is the lack of conceptual uniformity: not knowing what the educational proposal represents may cause confusion among those involved – school representatives, students, family, public and private entities, among others. Therefore, further empirical research is suggested, with longitudinal analyses to track results, impacts, and variables affecting the development of entrepreneurship education in the short and long term.

In a more critical view, regarding the challenges identified, a question arises: is it possible to implement entrepreneurship education without observing the ontological aspects in which the individual is involved? This question arises from the link between

human and cultural capital, represented in the formation of individuals as thoughtful, socially, and economically active beings, from their childhood to adulthood, in a society stimulated by capitalism. It is visible the need for integration between the political, business, educational, family spheres, and the support of society in general, to entrepreneurship be seen as part of a human, social, and economic development.

Regarding the limitations of the study, it is the choice of only one database, the totality of existing research in the area is not reflected. Thus, it is suggested the development of an analysis considering more than one database, to compare with the results obtained, in addition to the possibility of research with several authors involved in education, as well as possible models of implementation for such educational approach or methodological strategies for working in the classroom. It is worth mentioning the difficulty in finding research focusing on the approach of entrepreneurship education in basic education, because, as already presented by Araujo and Davel (2018), most of them focus on studies at the level of higher education.

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Authors' statement of individual contributions

Roles	Contributions by authors			
	Carvalho A. J. C.	Corrêa R. O.	Carvalho G. D. G. de	Olave M. E. L.
Conceptualization	■	■	■	
Methodology	■	■	■	■
Software	■	■	■	
Validation	■	■	■	■
Formal analysis	■	■	■	■
Investigation	■			
Resources	■	■	■	■
Data Curation	■			
Writing - Original Draft	■			
Writing - Review & Editing	■	■	■	■
Visualization	■	■	■	■
Supervision		■	■	■
Project administration	N.A.	N.A.	N.A.	N.A.
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