

# Formative Research in Accounting Education: Concepts, Challenges, and Pedagogical Potentialities — An Integrative Review

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## Abstract

**Objective:** To present the progress of formative research in higher education in accounting and the need to work on related public policies, considering the need to use different strategies in university accounting education and that formative research is a relevant alternative, in the development of formation.

**Method:** An integrative literature review is proposed, through a database search of articles published between 2000 and 2020. The inclusion criteria are related to accounting and publications in English and Spanish, the exclusion criteria are documents prior to the year 2000 or after 2020 and documents without access, and publications in other languages. The sources of information are academic databases. The risk of inclusion bias arises from only incorporating studies published in English and Spanish. The results of the review point to five analytical categories that focus on: definition between research to teach and research training; objectives; strategies; roles in the process; and associated problems.

**Results:** A total of 46 studies were identified. Formative research is training through research, in which a direct and interdependent relationship is assumed between research and teaching, which strengthens the joint learning of teachers and students. It is a relevant tool that contributes to accounting training, which is characterized by being traditionalist and tending towards the technical.

**Contributions:** The main contribution is based on demonstrating the need to develop institutional and state guidelines for the incorporation of formative research in higher education and specifically in accounting programmes. The work presents a gap regarding the recognition of applied formative research in the accounting field, conception, and the need to establish institutional policy guidelines in universities and the State. The aim is to establish a documentary research line on the advances in formative research. This initial review provides a baseline from which periodic reviews every five years can be conducted to identify changes and propose new developments on the topic.

**Keywords:** accounting education; formative research; integrative review; teaching with research.

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## Introduction

There are several problems and tensions being addressed in accounting education in different contexts. For example, in Colombia some authors state that teaching practices are still traditional, which translates into weaknesses, such as the lack of critical thinking development, scarce transdisciplinarity and problem solving in context (García-Jiménez, 2014; Rueda, 2015). This situation has made the professionals in accounting not so easy to adapt to environmental changes, which was demonstrated during the pandemic (Sangster, Stoner & Flood, 2020; Macias, Patiño-Jacinto & Castro, 2021; Casa Nova, Patiño-Jacinto & Macias, 2023). On the other hand, the accounting professional is required to provide alternative solutions to a problematic environment and to have a critical sense, contributing to social transformation (Patiño-Jacinto, 2020).

Faced with the problems raised, accounting educators and higher education institutions have discussed and implemented several solutions. One prominent approach is the adoption of formative research programs - often referred to as training through research - for which there exists a substantial body of literature. However, this literature remains highly fragmented around narrowly defined topics. This fragmentation underscores the need for a comprehensive literature review capable of offering a broader conceptualization of formative research and examining additional dimensions that may inform potential strategies for improving accounting education. Such strategies should be oriented toward teaching and learning practices that emphasize the active role of students.

There is a considerable body of research on the relationship between teaching and research in accounting education. Much of this literature emphasizes the need to develop research-related competencies, yet it does not explicitly address formative research, with the exception of studies conducted at a specific institution by Ríos (2012, 2013a, 2013b, 2013c). Complementing this line of inquiry, scholars have examined reviews of the curriculum (Patiño et al., 2017), graduates' perceptions (Patiño et al., 2018) and strategies adopted in Colombian accounting undergraduate programs (Patiño & Santos, 2009; Castaño, 2019). Additional studies focus on particular teaching strategies, including problem-based learning (Wilkin, 2014; Hansen, 2006), academic writing (Bargate, 2015; Leeke, 2020) and the use of images as pedagogical tools (Ong & Geri, 2019).

Previous studies thus tend to focus on specific aspects of formative research topics; however, in the same way, there is still no literature review that synthesizes these contributions or clarifies the progress achieved in the field. In the light of this gap, the purpose of this paper is to map the advances reported in studies on formative research specifically within

accounting education. To guide this endeavor, the following questions are proposed: (1) What are the prevailing conceptions of formative research? (2) What teaching and learning strategies are employed in its implementation? and (3) What challenges and tensions arise in the implementation of formative research? To make the study feasible, and following a tradition of literature reviews in accounting education (Rebele & Tiller, 1986; Rebele, Stout & Hassell, 1991; Rebele et al., 1998; Apostolou, Watson, Hassell & Webber, 2001), this initial examination of the topic adopts a temporal scope spanning from 2000 to 2020.

In so doing, the results and insights of this study may support the design or reinforcement of institutional or public policies related to formative research, as well as contribute to addressing the issues identified in the literature. Given the absence of prior literature reviews on formative research in accounting education - and the relevance of as means to improve teaching and learning processes - this proposal fills an important gap.

Advancing the understanding of this problem requires identifying the main categories of study, the positions adopted by different authors, and the existing gaps. This, in turn, contributes to the development of a coherent line of research. At the same time, some initial discussions are emerging regarding the development of public educational policies centered on formative research.

To achieve the objective of this paper, the theoretical framework is first presented, focusing on the relationship between research and teaching. This is followed by a description of the methodological strategy employed. Next, the results of the literature review are presented and organized into five analytical categories: (1) the positioning of definitions between "research to teach" and "training in research," (2) objectives, (3) strategies, (4) roles involved in the formative research process, and (5) associated problems. The paper concludes with a discussion and final remarks, synthesised in a map of tensions that highlights the key issues to be addressed.

### 1 A theoretical approach from the nexus between research and teaching

The relationship between research and teaching has been contemplated since before the nineteenth century, when German academics, out of concern for developing reflections and questioning knowledge, used research as a form of study, benefiting teachers and students, keeping them updated in their knowledge and intellectually interested (Neumann, 1996). In the nineteenth century

Humboldt argued about the need for students and teachers to research together as a way of knowledge building, so as part of the teaching and learning process (Robertson, 2007; Robertson & Bond, 2001). This perspective contemplates the link between research and teaching as positive for education, contributing to knowledge building. It is situated in the perspective of teaching through research. In this way, it is established that teaching and researching have a direct relationship, since teaching is carried out by teachers-researchers, with the possibility of including subjects that work on these issues to improve students' skills (Patiño et al., 2017), a positioning from which an improvement in the research culture of the institutions is also attained; that is, it states that researching and teaching are complementary activities. From Demsky and Zimmerman's (2000) perspective, research contributes to teaching and vice versa.

However, there are conflicting positions in that some teachers prefer researching without teaching and others think that researching does not contribute to teaching (Robertson, 2007). However, this paper focuses on the fact that researching and teaching are complementary activities, being both related to knowledge building, and that they are not substitutes neither have to be seen as activities competing with one-another.

Consequently, in this former view there is a clear tension between researching and teaching, since there is competition for resources available for teachers (Patiño-Jacinto, 2020). From the institutional point of view, according to González et al. (2016), the restriction of financial and non-financial resources, such as time, is contemplated (Brew, 2012), which must be distributed in the different activities. One of the reasons for this is the quantitative approach to research, which is often only evaluated by measurement results, i.e. based on productivity (Robertson & Bond, 2001; Robertson, 2007). From this point of view, it is not the impact of research on the formative process that is taken into account, but rather its tangible results that can be measured and categorised.

According to Ten-Yiu (2014) a major tension arises from the need for research to be productive, which makes it difficult to conduct research for training purposes. On the other hand, for teaching and research to be complementary, the subjects must be interlinked, and this is not always possible in a context of diminishing resources, which means that the same person has to devote time and effort to several courses, even some of which are not related to his or her line of research. Thus, as the promotion processes are mainly related to the quantitative research results, i.e., to the publication of articles and their impact, there is a tension in which teaching is sometimes made precarious. Finally, research is done with support resources that are

often scarce or unavailable, which impacts, among other things, the time and dedication needed to do research.

In the same way, it should be considered the great advantages of the link to research spaces, which is valued by the graduates, showing how they improve their skills, their personal links and their experience, among multiple aspects (Patiño et al., 2018). This is linked to Muñoz et al. (2013) development of the importance of the formative nature of research, its contributions to identifying problems and to the most fundamental aspect of education, conceptualisation.

This article analyses the relationship between research and teaching as direct and interdependent, in which the joint learning of teachers and students is strengthened (Brew, 2012). In this nexus, Ruth Neumann (1992) identifies three ways through which it contributes to education and which are presented in Table 1, in terms of form and impact.

**Table 1. Ways in which the close relationship between research and teaching has an impact.**

Ways	Impact
<b>Tangible</b>	Research has an impact on education through the updated knowledge obtained by teachers and students in their research, in addition to presenting disciplinary updates.
<b>Intangible</b>	The teacher impacts the student by contributing to the development of a critical stance and the student awakens new academic interests in the teacher.
<b>Global</b>	Research culture and educational practice are improved.

Source: own elaboration based on Neumann (1992).

According to the above, formative research is based on the interdependence of teaching-research, since research contributes to the improvement of the teaching process, in which students and teachers learn together, impacting the research culture of the institution. In this way, in the case of accounting education, it is possible to contribute to improving the profile of accountants, so that he/she is capable of proposing alternative solutions to the problems being identified, in a critical way and based on an investigative posture. In other words, we propose that the positive impacts will be extended to professional education.

## 2 Methodological strategy

The research approach is based on an integrative literature review, as proposed by Whitemore and Knaf (2005), comprising in six stages: (1) identification of the problem, (2) literature search, (3) document retrieval, (4) document analysis, (5) analysis and (6) presentation of the results. For the data screening process, the PRISMA methodology is used (Page et al., 2021).

### 2.1 Identification of the problem

Initially, it is determined that in the search results there are no literature reviews regarding formative research in accounting, which emphasises the importance of such study. In addition, the topic is relevant to support the improvement of teaching and learning processes and to inform the implementation of policies and practices to assist the implementation and evaluation of formative research processes. This leads to the following research questions: What are the perceptions of the concept of formative research?, What strategies are used in the implementation of formative research?, and What are the problems faced in the implementation of formative research?

### 2.2 Literature search

The literature search was carried out in the following databases: Taylor & Francis, Science Direct, ERIC, Web of Science, Ebsco y Google Scholar. To identify documents written in English, the terms "learning in research mode", "research-led teaching", "teaching and research", "research informed teaching", "writing to learn", "research-teaching nexus", all combined with "accounting" were used. On the other hand, for documents written in Spanish, we searched for the terms "investigación formativa en contabilidad", "contable", "contaduría", "contador" y "contadores", and the same for "formación en investigación", "formación para la investigación", "formación investigadora" and "habilidades investigativas". We searched for documents published between 2000 and 2020, with the search and retrieval process taking place between January and February 2021.

### 2.3 Document retrieval and assessment

The inclusion and exclusion criteria for papers identified in the literature search are described in Table 2.

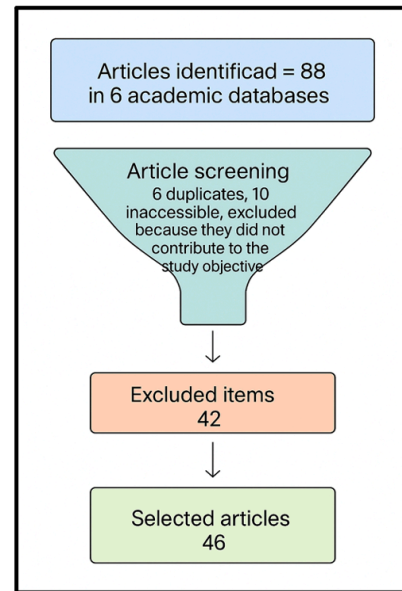
**Table 2. Inclusion and exclusion criteria**

Inclusion criteria	Exclusion criteria
Related to accounting	Documents not related to accounting
Documents published between 2000 and 2020	Documents prior to the year 2000 or after 2020
Access to the document	No access
Publications in English and Spanish	Publications in languages other than English and Spanish

Source: own elaboration.

In the document analysis phase, after the filtering process, taking into account the exclusion factors, 46 documents were identified on which advancement was made; a complete reading of the documents was done. The risk of inclusion bias arises from only incorporating studies published in English and Spanish. The screening and selection of articles is summarized in Figure 1.

**Figure 1. Article selection process according to the PRISMA methodology**



Source: own elaboration.

### 2.4. Analysis and presentation of results

The analysis and presentation of results is given in five categories, according to Figure 2, being them (i) definition between "research to teach" or to "teach in research" (Concept); (ii) objectives (Objectives); (iii) strategies (Strategies); (iv) roles in the process (Roles); and (v) associated problems (Problems).

**Figure 2. Distribution of documents (in quantity) by category**

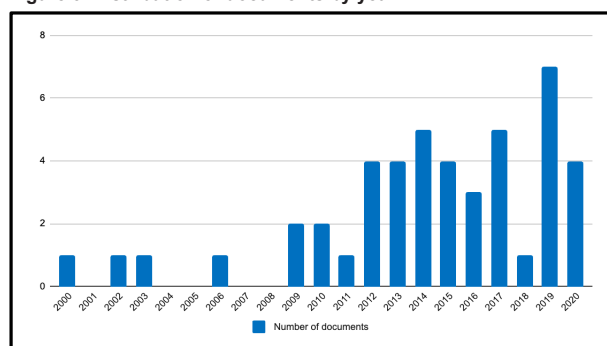


Source: own elaboration

The total does not add up to 46, as some documents are classified under more than one category. These analytical categories are proposed based on the analysis of the documents. In the case of the concept (or definition), it appears as a point of study since there is no agreement regarding what is (or not is) formative research; on the other hand, it is necessary to establish the objectives, since there is an important variety; as for the roles, there

are some that argue for an active role for different actors involved in the process; likewise, there is an important discussion regarding the possible strategies related to formative research; and finally, some problems have been identified, especially considering the limitations in the relationship between teaching and research as mentioned previously (see section 1). The Figure 3 presents the distribution of the studies by year.

Figure 3. Distribution of documents by year



Source: own elaboration

Figure 3 shows that interest in the topic of formative research has progressively increased during the period, achieving the maximum of 7 documents in 2019. It also calls attention to the fact that after 2009 at least one study had been published by year.

Regarding the sources of information, 2 books, 7 undergraduate and graduate theses, and 37 articles were identified. The articles are published in various journals, 35 different ones. Two journals include two studies each: Capic Review and Revista Científica General José María Cordova. The remaining articles are distributed across 33 journals, for example, Journal of Accounting Education, Accounting Education, The British Accounting Education, Cuadernos de Contabilidad, Teuken Bidikay and others.

On the other hand, the countries with the highest number of documents are Colombia, Australia, and the United Kingdom. In the first case, this can be explained by regulatory requirements, which have increased research on the topic. Table 3 summarizes the documents gathered using PRISMA protocol.

Table 3. Documents information summary

Author(s)	Year	Type	Journal	Country	Title
Demsky, J., & Zimmerman, J.	2000	Article	Accounting Horizons	US	On "Reseach vs. Teaching: A long-term perspective.

Day, M., Kaidonis, M., & Perrin, R.	2003	Article	Critical Perspectives on Accounting	Australia	Reflexivity in learning critical accounting implications for teaching and its research nexus.
Hansen, J.	2006	Article	Journal of Education for Business	Australia	Using Problem-Based Learning in Accounting.
Estrada, E., Peralta, S., Sarmiento, C., & Hernández, A.	2009	Article	Revista Desarrollo Gerencial	Colombia	Importancia de la investigación en la formación de los profesionales de la contaduría pública en la Universidad Simón Bolívar.
Patiño Jacinto, Ruth Alejandra Santos, Gerardo	2009	Article	Capic Review	Colombia	La investigación formativa en los programas de Contaduría Pública, caso Colombia
Rojas, José Triana, Laureano	2010	Article	Dimensión empresarial	Colombia	Investigación formativa holística en procesos de enseñanza - aprendizaje de la auditoría de gestión desde programas de contaduría pública, dirigida a empresas públicas y privadas
Murgueitio, Magdalena	2011	Article	Gestión y desarrollo	Colombia	La investigación formativa como eje dinamizador hacia un pensamiento crítico del ejercicio contable
Jusoh, R., & Abiolin, Z.	2012	Article	Procedia - Social and Behavioral Sciences,	Malasia	The Teaching-Research Nexus: A Study on the Students' Awareness, Experiences and Perceptions of Research.
Muñoz, S., & Duque, D.	2012	Article	Revista Visión Contable	Colombia	El descentramiento de la duda. Los grupos de investigación formativa en la Facultad de Contaduría Pública de la Universidad Autónoma Latinoamericana.
Muñoz, S., Ruiz, G., & Sarmiento, H.	2013	Article	Lumina	Colombia	Formación para la investigación contable. Una interpretación de las intencionalidades y las metódicas desde la mirada de los profesores.
Ríos, Roberto (a)	2013	Article	Revista Científica General José María Cordova	Colombia	La formación para la investigación de contadores públicos colombianos: un asunto de estrategia

Ríos, Roberto (b)	2013	Article	Revista Científica General José María Cordova	Colombia	La formación para la investigación en los programas de contaduría: una función del profesor universitario	Duff, Angus; Marriott, Neil	2017	Article	The British Accounting Education	UK	The teaching-research gestalt in accounting: A cluster analytic approach
Carriel, Juan Carlos	2014	Article	Revista Científica y tecnológica UPSE	Ecuador	Incidencia de la investigación formativa en los horizontes epistemológicos de la contabilidad	Chan, C.	2017	Article	English for Specific Purposes	Hong Kong	Investigating a research-informed teaching idea: The use of transcripts of authentic workplace talk in the teaching of spoken business English.
Ríos, Roberto López, Juan Antonio Trujillo, Juan	2014	Article	Teuken Bidikay	Colombia	La formación para la investigación y su incidencia en la cualificación académica de los estudiantes de Contaduría en Colombia	Díaz, Oscar Montes, Mariana Cangahuala, Oscar	2017	Article	Revista Científica Hermes	Perú	La investigación formativa en el pregrado; Una propuesta desde el plan de estudios de la facultad de ciencias contables en la PUCP
Ruíz, Gustavo Reyes, Jennifer Muñoz, Sandra	2014	Article	Praxis y saber	Colombia	La formación en investigación contable: de la declaración a la acción	Patiño Jacinto, Ruth Alejandra Melgarejo, Zuray Valero, Gloria	2017	Article	International Business and Economics Review	Colombia	La investigación formativa en los planes de estudio de los programas de Contaduría Pública: caso Colombia
Ten-Yiu, T.	2014	Article	Journal of Commerce & Accounting Research	Hong Kong	Controversies surrounding teaching effectiveness versus research productivity in accounting: some Hong Kong evidence	Wilkin, Carla	2017	Article	Education + Training	Australia	Enhancing critical thinking: accounting students' perceptions
Wilkin, Carla	2014	Article	Journal of accounting education	Australia	Enhancing the AIS curriculum: Integration of a research - led, problem-based learning task	Patiño Jacinto, Ruth Alejandra Melgarejo, Zuray Valero, Gloria	2018	Article	Activos	Colombia	Percepción de los egresados contables sobre la investigación formativa
Bargate, K.	2015	Article	South African Journal of Accounting Research	South Africa	Multiple interventions in a managerial accounting and financial management tutorial programme to enhance understanding.	Castaño, Carlos	2019	Article	Visión contable	Colombia	La investigación formativa en programas de contaduría: el caso de la Universidad de Antioquia
Lubbe, Ilse	2015	Article	Studies in Higher Education	South Africa	Educating professionals - perceptions of the research-teaching nexus in accounting (a case study)	Giraud, Francoise; Saulpic, Olivier	2019	Article	Qualitative Research in Accounting & Management	France	Research-based teaching or teaching-based research - Analysis of a teaching content elaboration process
Muñoz, Sandra Ruíz, Gustavo Sarmiento, Héctor	2015	Article	Investigación y reflexión	Colombia	Didácticas para la formación en investigación contable: una discusión crítica de las prácticas de enseñanza	Hancock, P., Marriott, N., & Duff, A.	2019	Article	Accounting and Finance	Australia	Research-teaching yin-yang? An empirical study of accounting and finance academics in Australia and New Zealand.
Shankar, B.	2015	Article	The International Journal of Management Education	India	Enhancing research-teaching link in organizational behavior: Illustration through an actual example.	Jack, L., & Saulpic, O.	2019	Article	Qualitative research in Accounting & Management,	UK	How qualitative research can infuse teaching in accounting.
Avendaño, William Rueda, Gerson Paz, Luisa	2016	Article	Cuadernos de Contabilidad	Colombia	La investigación formativa en las prácticas docentes de los profesores de un programa de contaduría pública	Molina, Yudy; Fonseca, José	2019	Article	Revista de Investigación, Desarrollo e innovación	Colombia	La investigación formativa contable en universidades de Tunja
Gómez, Ofelia Cely, Carmen	2016	Article	Capic Review	Colombia	Formación para la investigación: una aproximación a la cultura investigativa y conocimiento contable						

Molina, Yudy; Tobón, Luz; Fonseca, José	2019	Article	Revista de Ciencias Sociales	Colombia	Incidencia de la investigación formativa contable en el sector empresarial de Tunja - Colombia
Ong, Tricia; Geri, Hadrian	2019	Article	Journal of Education for Business	Australia	Adoption of emerging technology to incorporate business research skills in teaching accounting theory
Leeke, P.	2020	Article	New Writing	UK	Fake narratives and critical thought: how creative writing can facilitate critical thinking in an age of fake news and false accounting.
Tucker, B., & Scully, G.	2020	Article	Accounting Education	Australia	Fun while it lasted: Executive MBA student perceptions of the value of academic research.
Diniz, D.	2013	Book		Brasil	Carta de uma orientadora: o primeiro projeto de pesquisa. 2. ed. Brasília, Letras Livres
Demo, P.	2015	Book		Brasil	Aprender como autor. São Paulo, Editorial Atlas.
Upegui, María	2002	Thesis		Colombia	La enseñanza de la contabilidad: por una investigación formativa mediante el aprendizaje cooperativo
López, R., Díaz, T., Llerena, N., Prado, Y., & Vicedo, E.	2010	Thesis		Equator	Sistema de actividades para desarrollar las habilidades investigativas en los estudiantes de la licenciatura de contabilidad y finanzas de Sum de Colón
Ríos León, Roberto Antonio	2012	Thesis		Colombia	Incidencia de la formación investigadora en la cualificación académica de los estudiantes del programa de Contaduría Pública de la Corporación Universitaria Minuto de Dios, Colombia

Castillo, F.	2020	Thesis		Perú	Estrategia de redacción académica para desarrollar habilidades investigativas en los estudiantes de contabilidad de I.E.S.T.P.
Patiño Jacinto, Ruth Alejandra	2020	Thesis		Colombia	Análisis de las concepciones y estrategias de la investigación formativa para programas de contaduría pública en Colombia
Ríos, Roberto	2012	PhD Dissertation		Colombia	Incidencia de la formación investigadora en la cualificación académica de los estudiantes del programa de Contaduría Pública de la Corporación Universitaria Minuto de Dios, Colombia
Carvajal, Oscar	2016	Master Thesis		Colombia	Modelo de investigación formativa para el programa de Contaduría Pública de la Universidad Libre Seccional Cucutá

Source: own elaboration

### 3 Analysis of Results

In this section, each one of the categories resulting from the integrative literature review are presented and discussed.

#### 3.1. Training through research or training in research

The concept of formative research is established from two clearly defined perspectives: (1) teaching through research; (2) or teaching for training in and for research.

In the first perspective, teaching through research, it is established to teach accounting professionals through research strategies, independent of their professional role, i.e., that person can later work as a researcher or not. Therefore, its objective is that "they have more and better tools to perform in the organisations where they will apply their knowledge" (Castaño, 2019, p. 136).

From this positioning, accounting education is evidenced in various aspects such as human, soft skills, autonomous learning, among others, as it is noted that "it is important that professionals are able to learn by themselves, interpret and achieve an adequate reading of the reality of organisations" (Patiño-Jacinto, 2020, p. 38); that this contributes to their performance and

their critical role within society, independent of their professional role, which can be related to different areas. Sometimes this concept can lose sight of the fact that the research career is also a professional career, and that therefore, integrating research into teaching is also introducing to the students a future professional possibility.

On the other hand, teaching for research training "is an active initiation towards applied or proper research" (Ríos, 2013a, p. 178). This issue is especially relevant for academic programs, since the objective corresponds to improving research skills (López et al., 2010; Ríos, 2012; Muñoz et al., 2013; Ríos, 2013b; Ríos, 2013c; Castillo, 2020). In this sense, it is of concern to identify strategies that facilitate the teaching-learning process of researchers, achieving critical learning, interdisciplinarity and flexibility (Avendaño et al., 2016). This aspect alone does not emphasise that these competencies are also essential in other professional careers as they give professionals a critical posture necessary at a time of complexity and constant change.

In this second positioning, the fundamental objective is teaching to train researchers; therefore, the central concern is how to carry out this work in order to obtain favourable results, which is generally done by linking students to formal research processes carried out by teachers.

In summary, taking into account the relationship between research and teaching, teaching through research is situated from the perspective of interdependence, in which the teaching-learning process is improved through different strategies that contribute to consolidate the research culture (global impact), having relevance in the academic community.

In this aspect it is relevant to consider the perspective adopted by the program and the institution, so that they are aligned. In addition to the guidelines in the country's educational policy, considering the need to regulate the two positions that can be associated with formative research, depending on the needs of the context.

### 3.2 Objectives of formative research

In studies dealing with the objectives of research training, one aspect initially identified is the importance of achieving formation as a person through formative research (Muñoz et al., 2015; Patiño et al., 2018; Patiño et al., 2017), called integral formation by some authors and also by the terms used in the public policy associated with higher education in some countries (Castaño, 2019; Patiño et al., 2017); various topics are found, for example, that:

the teacher-student relationship is improved; one learns to tolerate criticism (Patiño et al., 2018). In this sense, it is established that formative research should contribute, from the human perspective, to tackling problems and it is identified as a positive factor to build ties with teachers. These relationships are perceived as favourable for professional development.

In the same way, these processes generate self-confidence in students, in addition, curiosity and creativity are stimulated (Ríos, 2013b); it improves teamwork (Muñoz et al., 2013; Patiño et al., 2018); the formation as the political agent is also strengthened (Ruíz et al., 2014), situating and proposing solutions in a specific context (Carriel, 2014). In this sense, it is considered essential to educate students in various areas, for example, the need to take a political stance based on the information about the context, and to adopt a critical stance in order to identify problematic problems and propose alternative solutions. Perhaps this will lead to citizenship education and the construction of a critical historical subject, as proposed by Paulo Freire (1996). In addition, students cease to be only consumers of knowledge to adopt the role of authors, or of constructors of knowledge (Demo, 2015; Diniz, 2013).

On the other hand, it is possible to develop communication skills, such as public speaking, argumentation, reading, composing and writing of texts (Patiño et al., 2018), scientific writing and oral communication (Gómez & Cely, 2016). With regard to the specific issue of reading, a special concern is identified due to students' deficiencies (and insecurities) in this aspect (Patiño-Jacinto, 2020). These skills contribute to the accounting professional regardless of the role he/she assumes as a professional, for example, auditing, financial accounting, research, among many other possibilities; indistinctly it is necessary to have communication skills.

In terms of technical aspects, formative research is considered to contribute to improving the capacity to search and manage information (Upegui, 2002), analysis, prioritisation and contextualization of information (Murgueitio, 2011). These aspects are relevant in any discipline. However, for the accounting profession, they are of special interest since its object of study is focused on information.

At the same time, students improve synthesis, referencing and citation of written documents. In their ability to interpret, greater depth is achieved in some subjects studied (Patiño et al., 2018). This supports the performance of various topics studied in organisations. It also contributes to the

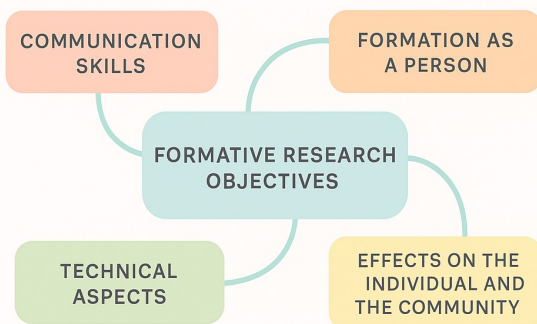
development of critical thinking, which corresponds to transcending the memorization of content (Wilkin, 2014; Wilkin, 2017), i.e., the formative perspective transcends towards non-traditional perspectives in the perception of education.

Thus, the contributions to the technical aspects are broad, to which are added the interdisciplinary exchange, the ability to integrate content (Muñoz et al., 2013), reflection and conceptualization (Muñoz & Duque, 2012). In short, the contribution from the technical aspect is relevant and can contribute to improve the profile of the accounting professional and to broaden the possible professional roles.

Some objectives focus on the effect on the institution and the community, on the relationship between research and teaching. The engagement with students affects the role of teachers as researchers, generating emancipatory processes for both students and teachers. It is posited that reflection exposes conflicts, ideology and complexities (Day et al., 2003; Jack & Saulpic, 2019), they contribute to the construction of the culture of reflection and discussion. In this same sense, students perceive that the objective corresponds to the research culture, since it generates community knowledge of research developments (Jusoh & Abiolin, 2012), which connects the student with discussions of their environment, in addition to generating the possibility of linking professionals with knowledge of research processes to contribute to the solution of problems and remain up-to-date (Estrada et al., 2009).

A summary of the formative research objectives grouped into different categories can be found in Figure 4.

Figure 4. Categories of the objectives of formative research



Source: own elaboration

In most of the objectives there is no clear position as to whether they are identified from the perspective of teaching through research or from the perspective of teaching to train researchers, which is why it is established that they could be recognized as transversal, i.e., different objectives

are part of the accountant's education, regardless of the professional role.

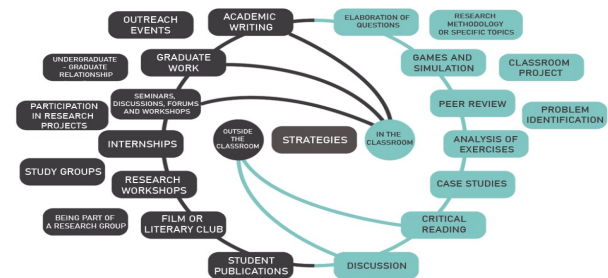
Given the above, it is necessary that the educational policy institutions (i.e. Ministry of National Education) and the universities take the lead on this issue, in such a way that it contributes to the achievement of the proposed objectives in a coordinated manner.

### 3.3 Formative research strategies

According to Patiño-Jacinto (2020), the strategies are diverse, and some can be applied transversally, others in specific moments of the course or program; on the other hand, strategies are also identified to be applied in the classroom or outside it, and some focused on teaching through or for research, although this last criterion is very complex to classify them, since most of them apply in both perspectives.

For the purposes of this work, they will be classified into strategies applicable inside or outside the classroom or what Muñoz et al. (2015) define as curricular or extracurricular spaces. These strategies can be summarised as shown in Figure 5.

Figure 5. Formative Research Strategies inside and outside the Classroom



Source: Patiño-Jacinto (2020)

#### 3.3.1. Formative research strategies inside the classroom

In the strategies that are developed in the classroom, specific academic spaces are initially identified in subjects related to research, such as methodology (López et al., 2010), as well as projects that correspond to academic spaces that link the contents of other subjects (Patiño & Santos, 2009; Patiño et al., 2017), it is a way of linking problems and contents to bring the student closer to complex topics closer to reality.

Various strategies are proposed to improve research and writing skills such as: academic review, expository essay, argumentative essay and directed state of the art (Díaz et al., 2017), theoretical essays, journal clubs, seminars, research project development activities (Ríos, 2012;

2013a; 2013c); these forms of applying formative research can be used in different academic spaces, in such a way that they are planned activities that lead to the attainment of the educational objectives, based on transversality and thus generate a greater impact.

In this sense, writing can be used as learning exercise, improving communication and comprehension skills so that students feel comfortable doing the practice (Bargate, 2015), to which is added the possibility of writing, even creative writing, to achieve critical thinking (Leeke, 2020), which modifies the profile of the accountant and has multiple thematic and structural options.

In some cases, possibilities are explored through visual components such as images, videos and animation, to achieve the link between theory and practice (Ong & Geri, 2019), which is a contribution, since in many students this type of strategy has a greater impact. The importance of visual techniques in a subject that sometimes tends to be rigid, as well as the relevance of contributing to the link between theoretical content and practical applications.

In relation to problem-based learning (Wilkin, 2014), it is argued that it contributes to identifying concepts and principles associated with accounting, leading to critical thinking and improving skills in cooperative or collaborative work (Hansen, 2006); it also has the possibility of being applied to accounting problems.

### 3.3.2. Formative research strategies applicable outside the classroom.

The research group, which corresponds to students and teachers who carry out research work and discussion as a group, is a strategy used for reflection and conceptualization, and even entrepreneurship and innovation projects (Muñoz & Duque, 2012). It is generally carried out outside the classroom with the exception of that outlined by Castaño (2019), who in the case study conducted proposes its inclusion in the curriculum as a curricular strategy, that is, as an academic space.

On the contrary, Ríos (2012; 2013c) delimits it as a strategy to train researchers and stimulates vocation in this sense, i.e., this author delimits the research groups. However, in subsequent studies (Patiño et al., 2018; Patiño-Jacinto, 2020) it is found that these groups contribute to the comprehensive training of accountants regardless of their professional work.

Likewise, other strategies are proposed to improve research training, such as dissemination events, publications, study groups (Patiño & Santos, 2009), participation in research groups (Ríos, 2013a), in these cases the coverage is limited by resources such as time for teachers's supervision and,

in general, by the resources allocated (Patiño-Jacinto, 2020); However, it is considered that they could be used for the education of accountants in general, not necessarily researchers, since through these exercises objectives such as academic writing, public speaking, information analysis, among others, are achieved.

On the other hand, a relevant strategy corresponds to the degree option (Patiño & Santos, 2009) or monographs (Ríos, 2013b), since the student carries out the complete process of identifying problems, searching and systematising information, proposing solutions and writing the report.

Finally, two alternative strategies are identified that correspond, initially, to the connection with companies (Rojas & Triana, 2010); the objective is to apply research processes to contribute with companies in the problems related to accounting. On the other hand, it is proposed to make transcriptions as support for learning English applied to business; this reinforces the link between research and teaching (Chan, 2017), in addition to improving comprehension in other languages.

Regarding strategies, it is important to consider the need for policy guidelines to achieve the application of various tools, with institutional support, which implies coordination in the academic program and having the necessary resources, with clarity as to what objectives are sought in the process.

### 3.4. Roles associated with the formative research process

As for the different roles or actors within the formative research process, they are the teacher, the student, the directors, the state or accreditation agencies and the communities of influence.

Teachers are perceived as the main actors of the process, since they are the motivators and experts, advising the students' activities (Muñoz et al., 2015); on the other hand, they must interrelate research with the contents of the academic spaces and update the work material (Carvajal, 2016). From these analyses, the actions of the formative process are centred on the teacher, which could be questioned from the perspective of the active role of the student, promoting developments and improvements in their skills.

On the other hand, institutions may prefer to hire full-time professors with doctorates, who provide incentives for research, including training, without excluding some part-time professors who work on company-specific topics such as taxation or auditing.

Other actors such as managers, students and the state

are mentioned (Ríos et al., 2014; Ríos, 2013a; 2013c); however, there is no evidence of important developments in the role they play, except by Patiño-Jacinto (2020) who identifies that student as the most important actor, since he/she must be active for these processes to be successful and, additionally, questions that the role of the institutions and the state must provide clear policies to ensure that the formative research process can be carried out.

In this category, there is an important gap, since the institutions should be part of the implementation of formative research programs, in order to reduce the tensions related to the allocation of resources to research and teaching, to achieve transversal strategies, planned and in synchrony with the training objectives, but this question has not been sufficiently studied.

Similarly, it is important to identify how students' attitudes towards these practices affect them, in addition to the needs regarding the updating of public policies.

### 3.5. Problems identified in the formative research process implementation

Some of the problems focus on students, for example, their capacity and attitude (Estrada et al., 2009; Castaño, 2019), there is disinterest in some opportunities, since they perceive that formative research processes are only important for future researchers, so that the scope of the strategies used is unclear. Likewise, there is low participation in research activities such as research seminars (Jusoh & Abiolin, 2012). Thus, it is crucial to make students aware of the importance of these practices and promote active participation.

As for the teachers, there is the argument that they do not do research in the Colombian context, besides being disinterested in studying certain topics, which has negative effects on the teaching work, since they are not aware of the trends in the field (Castaño, 2019). Similarly, the time required commitment required for these processes is a constraint for teachers (Giraud & Saulpic, 2019); on the other hand, there is a lack of incentives, and this generates resistance from teachers (Duff & Marriot, 2017a). In general, these difficulties are associated with resources such as time, which restricts activities that can sometimes be considered complementary, such as research.

In this sense, in a study from Hong Kong, teachers acknowledge that research contributes to teaching; however, if the time commitment is excessive due to the pressure to publish, it decreases the time devoted to adequate class planning (Ten-Yiu, 2014), and research and teaching are perceived to be independent.

An additional constraint of using current research in the classroom is that it requires credibility, in terms of source; however, sometimes there are biases in the papers in terms of gender, country of authors, among others (Tucker & Scully, 2020), which requires at least two efforts: properly selecting the papers in terms of the rigorosity to which they refer to; and trying to override biases in the other aspects.

Castaño (2019) perceives a lack of institutional support, since there are no incentives for the development of formative research, which hinders the transversal implementation, given by institutional guidelines. This additionally leads to the relationship between research and teaching being perceived as competition for resources (Demsy & Zimmerman, 2000), as previously stated, these resources being time and financial funds to support the implementation of these strategies and practices.

On the other hand, the curriculum is saturated with content, which leads to limited time to work on research topics or use strategies that require significant time in academic spaces (Lubbe, 2015). In this aspect, it should be considered to work on the given contents through formative research strategies, in addition to analysing curricular reforms, as it is not currently necessary to propose a significant amount of contents and achieve an important autonomous learning process.

Regarding degree works or monographs, according to Molina and Fonseca (2019), it is considered that they should have an impact on companies, from the perspective of the need to have social impact on organisations, which should not necessarily be done through formative research processes, but rather the impact that professionals who have a profile with diverse skills have.

In a review exercise of the factors that affect the teaching and research nexus, it is presented that, although this close relationship is beneficial, there are negative factors such as: the difficult to balance the incentives for teaching and research, as well as promotion policies; overload in the curriculum; decreased coverage of academic spaces if research is included; students need of developing professional skills instead of research; teaching and research require different qualities; among others (Duff & Marriott, 2017b), which reiterates the importance of the issues previously mentioned.

On the other hand, regarding the impact of the nexus between research and teaching on organisational behaviour, it is considered that the connection is inadequate (Shankar, 2015), and that an effort is needed

to connect classroom activities with issues related to the reality of the entities, in such a way that it is necessary to focus efforts on the planning of formative research processes.

In the same vein, regarding the relationship between research and teaching, teachers are not perceived as interested in UK and New Zealand, there is also a shortage of leadership, massive classes and thinking of accounting as a means to an end rather than as interesting and rewarding subjects (Hancock et al., 2019), which significantly limits perceiving formative research as a process that makes a relevant contribution to accountants.

### 4 Analysis and Discussion

From the analysis of the documents, it is perceived that: the perspective of teaching through research is considered is broader, since it includes relevant aspects such as human training, additionally, it focuses on the vision from which the link between research and teaching is interdependent and complementary, and that research contributes to the development of teaching activities; while in the positioning of teaching to train researchers, they are seen as independent activities and only research is established as an area of training, which contributes to new knowledge, considering the established productivity benchmarks, as pointed out by Robertson & Bond (2001) and Robertson (2007).

The objectives of formative research are diverse, which were classified according to the relationship with personal development, communication skills, technical aspects, and finally, some related to the effects on the institution and the community, which evaluate the link between research and teaching, finding processes of reflection among students and teachers, as well as the generation of research culture through these dynamics, global impact proposed by Neumann (1992).

Teaching and Learning Strategies are a topic of great importance in formative research. They contribute to the achievement of the objectives, and, in this work, they are classified into those that can be carried out inside the classroom and those that are external (outside the classroom), i.e., there are several possibilities. Inside the classroom it is possible to achieve transversality and coordination in the activities; on the other hand, those that take place outside the classroom have the disadvantage of being restricted to a group of students, because they are not in academic spaces and because of the restriction of resources posed by the tension between research and teaching.

Regarding the roles within the formative research process, it is perceived that the topic is underdeveloped, since it

does not emphasise the active role played by students as the protagonists of their educational process; on the other hand, no studies are found related to aspects such as the role of the state through the establishment of guidelines for the programs and institutions proposing transversal strategies to achieve the learning objectives and contribute to the link between research and teaching.

There are several problems associated with formative research, especially with regard to the resistance of teachers and students, due to different reasons, for example, scarce incentives; therefore, tactics should be proposed from the educational institutions to transcend these situations.

Finally, a map of tensions was developed as a proposal (see Table 3) on the comparison between “teaching through research” and “teaching to train researchers”, which is hoped can contribute to the reflection on the potentials of each one and on the decisions that should be taken in terms of designing and planning institutional and public policies. The map explores each analytical category, relating them to tensions and reflections that should be made.

Table 3. Map of tensions

Category	Tensions	Reflections
Teaching through research or teaching to train researchers	<ul style="list-style-type: none"> <li>- Objectives Comprehensive training?</li> <li>- Inflexible curriculum</li> <li>- (Dis)connection with practice and civic life.</li> </ul>	<p>The objectives must be defined so that they are clear to all the actors involved. Thus, they must be related to comprehensive training and to the curriculum, which sometimes can be understood as inflexible, and must explore the links to professional practice and civic life.</p>
Standards and Curriculum	<ul style="list-style-type: none"> <li>- Regulations associated with the curriculum (i.e. Accreditation Boards - Ministries - State)</li> </ul>	<p>An important role can be attributed to regulations and accreditation councils, in terms of establishing guidelines. But sometimes there is a perceived lack of clarity or a lack of intentionality, and the institutions take it into account only to comply with the norm.</p>

<p><b>Teaching strategies</b></p> <ul style="list-style-type: none"> <li>- Transversality and planning</li> <li>- Coverage</li> <li>- Courses</li> <li>- Seminars</li> <li>- Research groups</li> </ul>	<p>Teaching strategies are classified as those that could be implemented inside and outside the classroom. In general, strategies that are planned and transversal should be applied. However, for those applied outside the classroom, the limitation is that not all students can be included. In other words, they have coverage but no transversality, or they have transversality but no coverage, and thus they can exclude some student profiles. One criticism is that student participation might affect the average productivity of research groups.</p>
<p><b>Actors in the process</b></p> <ul style="list-style-type: none"> <li>- Ministry (State)</li> <li>- Accreditation Council</li> <li>- Educational institutions</li> <li>- Teachers</li> <li>- Students</li> <li>- Researchers</li> <li>- Research groups</li> </ul>	<p>Here the tensions are many, and are related to the diversity of institutions (whether private or public, high quality or not). The role of undergraduate students in the research process must be taken into account. For some teachers, it is a waste of time to get involved, as they have no incentive to do so because they are pressured by the productivity indicators that research groups have to maintain, to be well-ranked. Thus, it is necessary to establish clear directives, with a system of incentives that comes from public policies from the ministry and the accreditation council, as well as from HEI themselves. On the other hand, institutions may prefer to hire full-time professors with doctorates, who provide incentives for research, including training, without excluding some part-time professors who work on company-specific topics such as taxation or auditing.</p>
<p><b>Resources</b></p> <ul style="list-style-type: none"> <li>- Teachers</li> <li>- Institutions</li> <li>- Research Groups</li> </ul>	<p>There is a clear tension between research and teaching, since there is a perception of competition for resources. Institutions consider the restriction of financial and non-financial resources. One of the reasons for this situation is the quantitative approach to research, since it is frequently assessed only by measuring results, based on productivity. Thus, the impact of research on the formative process is not contemplated.</p>

Source: own elaboration.

These tensions are also, at the same time, opportunities for institutions, accreditation councils and state to act in the development and implementation of public policies and in establishing incentives for a transversal integration of research in the curricula, in the search for integral and citizen education, whether as accounting professionals or as researchers.

## 5 Concluding remarks

In that way, accounting education will achieve what is proposed by Patiño-Jacinto (2020), being accountants “able to learn by themselves, interpret and achieve an adequate reading of the reality of organisations” (p. 38). Additionally, formative research would reflect on the interdependence of teaching-research, once that research contributes to an educational process, improvement, in which students and teachers learn together, therefore positively impacting the institution's research culture.

The main limitation is that the study focuses on using only one source of information, the documentary. Also, it is delimited to documents written in Spanish and English, excluding references in other languages. Future research could deepen the understanding of the link between training objectives and how they are achieved with the strategies proposed here in terms of formative research. Another possibility is further study of the proposed categories by adopting different methodological strategies. Finally, there is the alternative of conducting in-depth studies in each one of the categories.

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