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ORIGINAL

From the Classroom to Publication: Scientific Production of Ecuadorian Teachers in Indexed Journals

Desde el aula hacia la publicación: Producción científica docente en revistas indexadas del Ecuador

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ABSTRACT

Introduction: teachers' scientific production is an indicator of professional development and educational commitment. In Ecuador, there is no systematic record characterizing authors, topics, and institutional affiliations in nationally indexed journals.
Objective: to analyze the scientific production published by teachers of the Ecuadorian National Education System in journals indexed in Latindex Catálogo 2.0 during the 2020–2024 period.
Method: a retrospective bibliometric documentary analysis was conducted on articles published between January 2020 and December 2024. A total of 218 active Ecuadorian journals indexed in Latindex Catálogo 2.0 were reviewed, recording authorship, institutional affiliation, research line, methodology, educational level, and gender.
Results: a total of 1114 articles were identified in 63 journals. Social Sciences and the line of Educational Technologies predominated. Co-authorship was the norm, with 4 502 signatures and an average of 3,34 authors per article, while a gender gap persisted. More than half of the studies did not address a specific educational level, and rural and early childhood education were marginally represented. Methodological diversity was observed, with a balanced distribution of quantitative, qualitative, and review approaches.
Conclusions: The study provides a national baseline of teachers' scientific production, highlighting strengths and thematic gaps. The findings support reorienting the agenda toward underserved areas and consolidating deliberate capacity-building strategies—such as thesis by scientific article—aimed at strengthening teachers' research professionalization and the international projection of their production.

Keywords: Teachers; Scientific Production; Indexed Journals; Bibliometrics; Digital Competence.

RESUMEN

Introducción: la producción científica docente es un indicador del desarrollo profesional y del compromiso educativo. En Ecuador no existe un registro sistemático que caracterice autores, temáticas y filiaciones institucionales en revistas nacionales indexada.
Objetivo: analizar la producción científica publicada por docentes del Sistema Nacional de Educación del

Ecuador en revistas indexadas en Latindex Catálogo 2.0 durante el período 2020–2024.
Método: se realizó un análisis documental bibliométrico retrospectivo de artículos publicados entre enero de 2020 y diciembre de 2024. Se revisaron 218 revistas ecuatorianas activas indexadas en Latindex Catálogo 2.0, registrando autoría, filiación institucional, línea de investigación, metodología, nivel educativo y sexo.
Resultados: se identificaron 1114 artículos en 63 revistas. Predominaron las Ciencias Sociales y la línea de Tecnologías para la educación. La coautoría fue la norma 4502 firmas; media 3,34 autores/artículo y persistió una brecha de género. Más de la mitad de los estudios no abordó un nivel educativo específico, y la educación rural e inicial tuvieron presencia marginal. Se observó diversidad metodológica, con distribución equilibrada de enfoques cuantitativos, cualitativos y revisiones.
Conclusiones: estudio ofrece una línea de base nacional de la producción científica docente, evidenciando fortalezas y vacíos temáticos, lo que respalda reorientar la agenda hacia áreas desatendidas y consolidar estrategias deliberadas de capacity-building como la titulación por artículo científico, orientadas a fortalecer la profesionalización investigativa del magisterio.

Palabras clave: Docentes; Producción Científica; Revistas Indexadas; Bibliometría; Competencia Digital.

INTRODUCTION

The scientific output generated by teachers in the education system is an indicator of professional development, commitment to improving learning, and the generation of contextualized knowledge.[1] In Ecuador, this practice takes on a strategic connotation as it is recognized and promoted within the legal framework as a component of the national teaching career.

The Organic Law on Intercultural Education [2] recognizes scientific production as a fundamental part of the professional merits of the teaching profession; Article 176 establishes that research, publications, and contributions to science and culture must be considered in the merit rating processes for entry into the public education career. Complementarily, Article 201 provides for the granting of incentives to teachers who publish the results of innovative experiences or research in the field of their work. Furthermore, Article 215 of the General Regulations of the LOEI [3] confirms that research outputs, qualifications, professional experience, and courses form part of the merit component that accounts for 35 % of merit-based competitions and examinations.

These provisions institutionalize the value of teaching research and constitute an important motivator for teachers to engage in the generation of educational knowledge, thus strengthening the link between practice, theory, and continuous improvement. Despite this favorable framework, to date there is no systematic record that allows us to know how many teachers in the National Education System have published scientific articles in indexed journals, what topics they have addressed, or to which educational institutions they are affiliated. This lack limits the objective assessment of their research contribution and the formation of professional learning communities based on empirical evidence.

A recent analysis conducted by Mansutti Rodríguez et al.[4] on 928 articles indexed in Scopus between 2017 and 2022 shows that 62 % of research focuses on higher education. It also reports that the educational level with the fewest articles is early childhood education, and points to the need to focus research processes on basic school levels. This finding highlights an imbalance in the focus of research, prioritizing higher education and leaving basic school levels in the background, despite their importance in the country's educational system.

In addition, much of the research reviewed does not address the priorities of the school education system or relate directly to the professional reality of classroom teachers.[5] This is also related to the platforms analyzed: databases such as Scopus exclude a large part of the national scientific production that circulates in journals indexed in regional portals such as Latindex Catálogo 2.0, a feasible space for finding articles written by SNE teachers, especially when it comes to research developed from educational practice.

The platform of the Network of Ecuadorian Scientific Publishers and Journals (RERCIE) is an organization that brings together active Ecuadorian scientific journals included in Latindex Catálogo 2.0, classified into subject areas such as Social Sciences, Exact and Natural Sciences, Life Sciences, Health Sciences, Engineering and Technology, Arts and Humanities, and Multidisciplinary. This makes it possible to identify journals where teachers in the National Education System, regardless of their field of teaching, may have published research related to their teaching practice, their institutional experiences, or the development of educational innovations.

Given the cross-cutting and interdisciplinary nature of education, this study will prioritize the review of journals belonging to the same areas proposed by RERCIE, as these are the ones that most frequently include pedagogical, didactic, or educational policy research. This selection does not exclude the possibility that teachers may have published in other areas, but it responds to the need to focus on the thematic areas where the teaching research function is most clearly articulated with the National Education System.

Given this situation, it is essential to have a study that highlights the scientific output of the national

teaching profession from an inclusive, regional, and pedagogically committed perspective. The objective of the research was to analyze the scientific output published by teachers from the National Education System of Ecuador in journals indexed in Latindex Catálogo 2.0 during the period 2020–2025.

METHOD

A bibliometric documentary analysis was carried out with manual data collection, aimed at quantifying and characterizing the scientific output published by teachers in Ecuador's National Education System (SNE). The design was retrospective and included articles published between January 2020 and December 2024 in active Ecuadorian scientific journals indexed in Latindex Catálogo 2.0, organized in the Network of Publishers and Scientific Journals of Ecuador (RERCIE). A total of 218 journals were reviewed, distributed across six areas of knowledge: Exact Sciences (37), Health Sciences (30), Arts and Humanities (14), Social Sciences (78), Life Sciences (12), and Multidisciplinary (47).

The selection of articles was based on rigorous criteria that ensured the relevance of the information analyzed; Only publications from the period 2020–2024 that were part of Ecuadorian journals indexed in Latindex Catálogo 2.0 were included, corresponding to original research or reviews with clearly identifiable methodology, addressing topics related to the National Education System and with authors explicitly affiliated with Ecuadorian educational institutions.

Articles outside this time frame, those in non-indexed journals or only present in the Latindex Directory, essays, notes, editorials, reviews, and other non-research texts were excluded, as were articles that were not thematically related to the national education system or that lacked authors with affiliation.

The data collection procedure was carried out in two complementary phases. In the first phase, Ecuadorian scientific journals included in Latindex Catálogo 2.0 were identified through the RERCIE portal. In the second phase, all volumes and issues published during the established period were manually reviewed, verifying the authorship, institutional affiliation, subject matter, methodology, and other variables defined for the study in each article.

The information collected was organized into a document analysis matrix, which allowed for the standardized recording of the necessary variables: year of publication, authorship, institutional affiliation, journal and type of indexing, area of knowledge, educational level addressed, line of research, methodology used, number of authors, and gender of the authors. The data was then cleaned to avoid duplications or inconsistencies and analyzed using descriptive statistics, obtaining frequency distributions and percentages for each variable.

This process guarantees the reproducibility of the study, given that any researcher can replicate the search by following the RERCIE journal classification and the defined criteria, considering that the sources consulted are freely accessible in Latindex Catálogo 2.0. However, it is recognized as a limitation that the dataset processed in the document matrix, consisting of 1114 articles, has not been deposited in a public repository, which restricts the possibility of immediate reuse by other researchers.

RESULTS

During the period between January 2020 and December 2024, 1114 scientific articles published by teachers from the Ecuadorian National Education System were identified in a total of 63 journals, which are part of the 218 reviewed in RERCIE. These publications bring together 4,502 author signatures, equivalent to an average of 3,34 authors per article.

Annual production varied throughout the period; in 2020, 64 articles (5,7 % of the total) were recorded, while in 2021 the figure fell to 50 publications (4,5 %), representing a decrease of 21,9 %. In 2022, there was a sharp increase, reaching 257 articles (23,1 %), which meant a year-on-year growth of 414,0 %. In 2023, production fell slightly to 243 articles (21,8 %), equivalent to a negative variation of 5,4 % compared to 2022. Finally, in 2024, the highest point of the period was reached, with 500 publications, representing 44,9 % of the total and a year-on-year increase of 105,8 %. The summary of this distribution is presented in table 1.

Table 1. Articles published per year (2020–2024)

Year	Articles	% of total	Year-on-year variation (%)
2020	64	5,7 %	—
2021	50	4,5 %	-21,9 %
2022	257	23,1 %	+414,0 %
2023	243	21,8 %	-5,4 %
2024	500	44,9 %	+105,8 %
Total	1114	100 %	

Table 2. Articles by area of knowledge (RERCIE)

Area of knowledge	Articles	% of total
Social Sciences	868	77,9 %
Exact Sciences	92	8,3 %
Arts and Humanities	85	7,6 %
Life Sciences	40	3,6 %
Health Sciences	29	2,6 %
Total	1114	100 %

Table 3. Articles by educational level

Educational level	Articles	% of total
No level specified	622	55,8 %
Basic General Education	272	24,4 %
High School	152	13,6 %
Early childhood	68	6,1 %
Total	1114	100 %

Table 4. Articles by line of research

Line of research	Articles	% of total
Technologies for education	431	38,7 %
Society–school relationship	157	14,1 %
Comprehensive training and professional development for teachers	129	11,6 %
Educational management	111	10,0 %
Inclusive education for diversity	76	6,8 %
Sustainable and regenerative development	68	6,1 %
Educational assessment and quality	50	4,5 %
Subject teaching (language and mathematics)	41	3,7 %
Educational policies and governance	25	2,2 %
Student guidance and welfare	16	1,4 %
Rural and community education	10	0,7 %
Total	1114	100 %

The distribution by area of knowledge is shown in table 2. There is a marked predominance of social sciences, which account for more than three-quarters of total output. The other areas show a considerably lower share, with none of them exceeding 10 % of the articles published in the period analyzed.

55,8 % of the publications did not address a specific educational level described in table 3. Among those that did, Basic General Education accounted for nearly a quarter of the output, followed by High School and Early Childhood Education, both with smaller proportions.

As shown in table 4, the research area of Technologies for Education accounts for most of the output, with nearly 40 % of the articles published. This is followed by Society-School Relations and Teacher Training, which contribute significant proportions, while areas such as Rural and Community Education and Student Guidance and Welfare are minimally represented in the period analyzed.

As shown in table 5, quantitative approaches constitute the highest proportion of the output, closely followed by qualitative studies and reviews, both with similar shares of around 24 %. Articles with mixed methodology represent a smaller fraction, although sufficient to highlight the presence of research combining quantitative and qualitative data.

As shown in table 6, co-authorship by four researchers is the most frequent publication pattern, followed by three and two authors. Individual publications are in the minority, confirming that scientific output in teaching is mainly oriented towards collaborative dynamics.

Table 5. Articles by methodology

Methodology	Articles	% of total
Quantitative	366	32,9 %
Qualitative	268	24,0 %
Review	269	24,1 %
Mixed	211	18,9 %
Total	1114	100 %

Table 6. Distribution of authors per article

Authors per article	Articles	% of total
1	149	13,4 %
2	181	16,3 %
3	215	19,3 %
4	348	31,2 %
5	155	13,9 %
6	66	5,9 %
Total	1114	100 %

Table 7 shows variations in collaboration patterns according to the area of knowledge. In Social Sciences, which accounts for most of the output, articles with three and four authors predominate. In contrast, in Arts and Humanities, works tend to have fewer authors, with an average of 2,9. Life Sciences and, in particular, Health Sciences have the highest levels of collaboration, with averages of more than four authors per article.

Table 7. Average number of authors per area of knowledge (2020–2024)

Field of knowledge	Average number of authors	Most frequent range
Social Sciences	3,5	3–4 authors
Exact Sciences	3,2	2–3 authors
Arts and Humanities	2,9	2 authors
Life Sciences	3,7	4 authors
Health Sciences	4,1	4–5 authors

Table 8 shows variations in female participation according to field of knowledge. Although male authorship predominates in all disciplines, women account for 42,5 % of authors in Arts and Humanities, making it the field with the greatest relative balance. In contrast, in the Exact Sciences, Life Sciences, and Social Sciences, the proportion of women remains close to 25 %, reflecting a more pronounced gap. These results show that the gender distribution in scientific production by teachers is not homogeneous and that some areas are more conducive to female participation than others.

Table 8. Researchers by gender according to area of knowledge

Field of knowledge	Male	Female	% women
Social Sciences	2,250	870	27,9 %
Exact Sciences	320	110	25,6 %
Arts and Humanities	210	155	42,5 %
Life Sciences	270	90	25,0 %
Health Sciences	164	63	27,7 %
Total	3,314	1188	26,4 %

DISCUSSION

The sustained increase in Ecuadorian scientific output since 2022 is part of a global trend associated with the impact of the COVID-19 pandemic on education systems. Bibliometric studies on e-learning show a marked increase in research between 2021 and 2022, motivated by the need to migrate to digital environments and rethink teaching and learning methodologies.[6]

In this context, national data not only reproduce this international pattern, but also show the capacity of Ecuadorian teachers to adapt the demands of the environment to the generation of situated knowledge, particularly around technologies for education, an area that accounts for the largest proportion of production. This confirms that the national research response was not only reactive but also strategic, aimed at systematizing pedagogical experiences and practices linked to digital transformation.

A relevant internal factor that explains part of the increase, especially between 2023 and 2024, is the incorporation into professional master's programs of the option of obtaining a degree through a high-level professional article as an alternative to traditional thesis work. The CES Academic Regulations authorize this option as valid for fulfilling the graduation profile of these programs.[7]

However, rather than a "circumstantial factor," this policy should be understood as a deliberate capacity-building strategy aimed at professionalizing teaching research and expanding academic publishing skills. By establishing scientific articles as a formal means of obtaining a degree, the acquisition of scientific writing skills, understanding of editorial processes, and access to indexing communities is encouraged.

In this way, the measure increases the number of publications, which structurally strengthens the education system's capacity to sustain continuous and relevant scientific production. This element is particularly significant in comparison with other contexts in Latin America, where certification by articles is still in the pilot phase or restricted to certain programs.

The prevalence of the research line "Technologies for education" is related to the global interest in digital teaching competence, recognized as a priority field in systematic reviews and bibliometric analyses that examine its development, levels of competence, training processes, and links to student academic performance.[8]

In Ecuador, this orientation reflects that teachers are responding to the need to consolidate digital literacy as a structural component of pedagogical practice. However, a comparison with European contexts shows a contrast: there has been a reported growing emphasis on the digitization of rural teachers, with training policies and programs adapted to depopulated regions.[9] In the present study, lines related to rural education and student well-being appear to be underrepresented, revealing a thematic imbalance that should be addressed by diversifying research agendas aimed at historically neglected sectors.

From a methodological perspective, the relative parity between quantitative, qualitative, and review studies points to a heterogeneous research ecosystem. This finding coincides with international bibliometrics on e-learning during the pandemic, which highlight methodological diversification as a strategy for integrating data and synthesizing emerging knowledge.[10]

However, in the case of Ecuador, the importance of this diversity transcends the technical: it constitutes an indicator of maturity in the field of educational research, opening up the possibility of triangulating results and more robust comparative analyses. In addition, methodological variety reduces the risk of biases associated with the hegemony of a single paradigm and broadens the relevance of findings for public policy formulation. In this sense, methodological diversity contributes academic richness and strengthens the national ecosystem by providing it with more flexible and adaptable tools for addressing complex educational problems. Even so, the challenge remains of consolidating standards of transparency, open access, and replicability that allow this plurality to be exploited to the fullest.

The fact that this study focuses exclusively on Ecuadorian journals indexed in Latindex Catálogo 2.0 adds distinctive value by offering a detailed and contextualized characterization of the national publishing ecosystem. This approach responds to recommendations from regional bibliometrics, which emphasize the importance of examining local sources to avoid biases that render the production of non-English-speaking contexts invisible.[11]

However, this delimitation also implies limitations: possible publications by SNE faculty in regional repositories or international databases such as Scopus or Web of Science were not considered, as their coverage is partial and tends to favor journals in English and from countries with greater impact.[12] Recognizing this bias is essential to properly gauge the scope of the findings, but it also opens up the possibility for future research to conduct multi-local comparative analyses.

Taken together, the results offer a broad and up-to-date characterization of the scientific output of the National Education System in Ecuadorian journals indexed in Latindex Catálogo 2.0 (2020–2024). The evidence shows growth in volume, thematic and methodological diversification, consolidated patterns of co-authorship, and persistent gender gaps. This overview provides strategic inputs for promotion policies and for strengthening more equitable academic communities with international projection.

CONCLUSION

The findings show that, although national production is aligned with global trends in areas such as teacher digital competence and methodological diversification, significant gaps persist in fields of high social relevance, such as rural education, student welfare, and early childhood education. This contrast with international agendas underscores the urgency of rebalancing the thematic orientation of educational research, strengthening lines of work that respond to local needs and historically underserved sectors.

The analysis offers the scientific community a replicable methodological framework for evaluating teaching research output in other contexts by integrating criteria for thematic classification, educational level, and institutional affiliation. It also confirms the impact of institutional policies such as high-level professional article certification in master's programs, understood as a deliberate capacity-building strategy that stimulates knowledge generation.

This evidence constitutes a strategic input for academic managers, educational authorities, and research networks, who can use it to design interventions that increase the relevance, equity, and international projection of the scientific production of the teaching profession, while consolidating a more critical, innovative, and committed teaching community for educational transformation.

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CONFLICT OF INTEREST

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