



Mapping Literature Reviews in Education: A Bibliometric Analysis

Daniela Karine Ramos¹, João Mattar².



<https://doi.org/10.36557/2009-3578.2025v11n2p9249-9277>

Artigo recebido em 18 de Outubro e publicado em 18 de Dezembro de 2025

REVIEW ARTICLE

ABSTRACT

Literature reviews have gained increasing prominence in educational research, functioning as strategic tools for synthesizing evidence, guiding policy, and consolidating theoretical and methodological knowledge. This study examines how literature reviews in education are distributed thematically, geographically, and methodologically, offering a broad mapping of recent trends in the field. Based on a bibliometric analysis of 6,197 literature reviews extracted from the Web of Science (2019–2023), the study explores publication volume, types of reviews, thematic clusters, institutional and geographic origin, and citation patterns. Network visualizations of keywords and term analyses from titles and abstracts were generated using VOSviewer. Results reveal a predominance of systematic reviews and meta-analyses, with strong thematic concentrations in educational technology—notably artificial intelligence, online learning, and virtual reality—especially in higher education contexts. Reviews focusing on children, inclusive education, and mental health are also significant. The data further indicate geographic asymmetries, with Global South contributions underrepresented. This study provides insights into how literature reviews shape the field of educational technology and offers a methodological contribution to evidence-informed educational research. The findings support future research design and review practices and are relevant to both researchers and policymakers interested in synthesizing educational knowledge.

Keywords: bibliometric analysis; digital learning; educational technology; evidence-informed research; higher education; systematic literature review.



Mapeamento das Revisões de Literatura em Educação: uma Análise Bibliométrica

RESUMO

As revisões de literatura têm ganhado crescente destaque na pesquisa educacional, atuando como ferramentas estratégicas para a síntese de evidências, a orientação de políticas e a consolidação do conhecimento teórico e metodológico. Este estudo examina como as revisões de literatura em educação se distribuem temática, geográfica e metodologicamente, oferecendo um mapeamento abrangente das tendências recentes do campo. Com base em uma análise bibliométrica de 6.197 revisões de literatura extraídas da Web of Science (2019–2023), o estudo investiga o volume de publicações, os tipos de revisão, os agrupamentos temáticos, a origem institucional e geográfica e os padrões de citação. Visualizações em rede de palavras-chave e análises de termos de títulos e de resumos foram geradas com o VOSviewer. Os resultados revelam a predominância de revisões sistemáticas e meta-análises, com fortes concentrações temáticas em tecnologia educacional — notadamente inteligência artificial, aprendizagem on-line e realidade virtual — especialmente em contextos de ensino superior. Revisões com foco em crianças, educação inclusiva e saúde mental também se mostram significativas. Os dados indicam ainda assimetrias geográficas, com sub-representação das contribuições do Sul Global. Este estudo oferece subsídios para compreender como as revisões de literatura moldam o campo da tecnologia educacional e apresenta uma contribuição metodológica para a pesquisa educacional orientada por evidências. Os achados apoiam o desenho de pesquisas futuras e as práticas de revisão e são relevantes tanto para pesquisadores quanto para formuladores de políticas interessados na síntese do conhecimento educacional.

Palavras-chave: análise bibliométrica; aprendizagem digital; tecnologia educacional; pesquisa orientada por evidências; ensino superior; revisão sistemática da literatura.

Institutional Affiliation:

1. Universidade Federal de Santa Catarina (UFSC).
2. Pontifícia Universidade Católica de São Paulo (PUC–SP).

Corresponding Author: João Mattar joaomattar@gmail.com

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).





INTRODUCTION

Literature reviews have become increasingly prominent in educational research as important tools for synthesizing knowledge, informing policy, and supporting methodological development. They contribute to evidence-based practice and are frequently used to guide research and decision-making across educational contexts. At the same time, the growing diversity of review types—scoping, integrative, systematic, and metanalysis—raises questions about how these methodologies are used and perceived within academic research.

This study aims to map the field of literature reviews in education by conducting a bibliometric analysis of publications indexed in the Web of Science database between 2019 and 2023. More specifically, it investigates (1) the volume and temporal evolution of review publications, (2) the countries and institutional contexts from which reviews originate, (3) the types of literature reviews being conducted; (4) the thematic clusters emerging from keywords, titles, and abstracts; and (5) the most cited reviews.

This investigation justifies the growing need to understand how evidence is synthesized critically in education. Given the current emphasis on research-based practices and policies, assessing what knowledge is produced and how it is selected, categorized, and legitimized through reviews is crucial. Moreover, by identifying both central themes and underexplored areas, the study can support more balanced, inclusive, and methodologically diverse research planning.

The article is organized as follows to achieve these goals: The next section discusses the main types of literature reviews and the procedures typically used to conduct them, particularly in educational research. The methodology section outlines the bibliometric design of the study and details the data collection and analysis strategies. The results section presents quantitative and network analyses of the dataset, including keyword clusters, publication trends, and citation data. Finally, the discussion interprets these findings in light of broader debates about evidence, inclusion, and methodology in education, and the conclusion proposes directions for future research.



TYPES AND PROCEDURES OF LITERATURE REVIEWS

Narrative literature reviews, considered less systematic, aim to identify and describe what has already been published on a topic without necessarily seeking generalizations. They are inherently selective, do not typically follow a formal protocol, and do not involve quality assessment of included studies (Paré et al., 2015).

In contrast, systematic reviews adopt explicit, comprehensive, and reproducible methods to identify, evaluate, and synthesize research. They include formal quality assessment procedures—often conducted independently by two reviewers—and are designed to ensure transparency and reduce bias in evidence synthesis (Okoli, 2015; The Campbell Collaboration, 2023). Systematic reviews are especially suited to answering precise research questions concerning the feasibility, adequacy, significance, or efficacy of a treatment or practice (Ganeshkumar & Gopalakrishnan, 2013; Munn et al., 2018). When quantitative data are available, systematic reviews frequently include statistical synthesis such as meta-analyses (Whittemore & Knafl, 2005).

Scoping reviews serve a complementary role by mapping the state of the art, contextualizing the research problem, and providing an initial indication of the scope and nature of available literature. They are useful for identifying knowledge gaps and informing the design of future systematic reviews (Mattar & Ramos, 2021; Munn et al., 2018; Paré et al., 2015). Unlike systematic reviews, scoping reviews do not usually include formal assessment of methodological quality (Levac, Colquhoun, & O'Brien, 2010). They are appropriate when research questions are broad or exploratory and when researchers aim to chart and describe key concepts and types of evidence across a body of literature (Arksey & O'Malley, 2005; Munn et al., 2018).

Integrative reviews combine experimental and non-experimental studies, including both qualitative and quantitative evidence, to produce more comprehensive and theoretically grounded syntheses. They are considered one of the broadest types of literature review methods, as they allow for the inclusion of diverse sources and research designs (Whittemore & Knafl, 2005). Vosgerau and Romanowski (2014) distinguish between integrative approaches that interpret evidence alongside qualitative synthesis (often referred to as realistic reviews) and qualitative meta-



syntheses that seek to identify what works, for whom, and under what conditions. These reviews can inform the evaluation and implementation of interventions and public policies, supporting the development of evidence-based best practices (Mattar & Ramos, 2021; Silva et al., 2020).

To facilitate comparison and clarify the main distinctions across review types, Table 1 summarizes their core characteristics, including purpose, methodological rigor, data types, and typical outcomes.

Table 1. Comparison of Main Types of Literature Reviews in Education

Type of Review	Purpose	Methodological Rigor	Data Types Included	Quality Assessment	Typical Output
Narrative	To explore and describe existing literature on a topic	Low; often selective and non-systematic	Theoretical and conceptual	Not required	Broad overview; conceptual discussion
Scoping	To map the scope and nature of existing literature	Moderate; follows systematic steps	Broad (quantitative + qualitative)	Not typically included	State of the art; research gaps; conceptual mapping
Integrative	To combine and interpret diverse types of evidence	Variable; depends on integration strategy	Experimental + non-experimental; qualitative + quantitative	Optional or partial	Theoretical models; evidence-informed frameworks
Systematic	To answer precise questions through evidence synthesis	High; uses explicit and reproducible methods	Primarily quantitative; may include qualitative studies	Required; often with dual review	Evidence-based conclusions; may include meta-analysis

Source: The authors.

2.1 Procedures for Conducting Literature Reviews in Education

According to Mattar and Ramos (2021), conducting literature reviews in education can be broadly organized into three phases: navigation, planning, and execution.

In the navigation phase, researchers perform an exploratory search using academic databases, search engines, and other relevant sources to obtain a preliminary understanding of the available literature. This stage helps refine the research problem,



questions, and the initial search terms.

The planning phase involves developing a detailed protocol specifying the objectives, research questions, inclusion and exclusion criteria, and search strategies—including selecting databases, keywords, and filters. This protocol outlines data extraction and management methods and often incorporates established frameworks like PRISMA to ensure transparency and rigor. Involving experts such as librarians can enhance the quality of the planning process.

Finally, in the execution phase, the planned search is implemented across the selected sources. Researchers then systematically screen and select studies—initially by reviewing titles, abstracts, and keywords, and subsequently through full-text analyses—and extract relevant data. This phase is iterative; as new insights emerge, researchers may refine the protocol and selection criteria. Involving multiple reviewers throughout the process helps validate the application of inclusion criteria and ensures a more valid synthesis of findings.

By integrating these phases, literature reviews in education provide a comprehensive synthesis of existing research, identify gaps, and set the stage for future investigations, thereby contributing significantly to the evolution of educational theory and practice.

METHODOLOGY

This study employed a bibliometric approach to analyze educational literature reviews published between 2019 and 2023. Guided by the steps outlined by Zupic and Čater (2015), the research process involved (1) defining the research objectives and formulating the search expressions; (2) selecting the Web of Science (WoS) database as the source for bibliographic data and information recovery; (3) determining the units of analysis—including keywords; title and abstract terms; publication trends (e.g., revisions per year, country, and Web of Science Categories), and the identification of the most cited reviews; and (4) applying analytical techniques such as co-occurrence network analysis and descriptive statistics using VOSviewer (Van Eck & Waltman, 2023).

The Web of Science database was chosen for its extensive multidisciplinary coverage and specialized education categorization, facilitating a more precise retrieval



of relevant literature than broader databases like Scopus. The search was conducted for publications from 2019 to 2023, with a search string that included the following terms in English: (“Literature Review” OR “Critical review” OR “Mapping review” OR “Meta-analysis” OR “Mixed studies review” OR “mixed methods review” OR “Qualitative systematic review” OR “qualitative evidence synthesis” OR “Rapid review” OR “Scoping review” OR “State-of-the-art review” OR “Systematic review” OR “Systematic search and review” OR “Systematized review” OR “Umbrella review” OR “integrative review”). The “Review article” filter was also applied, selecting the “Education Educational Research” area, the only category directly related to Education in WoS.

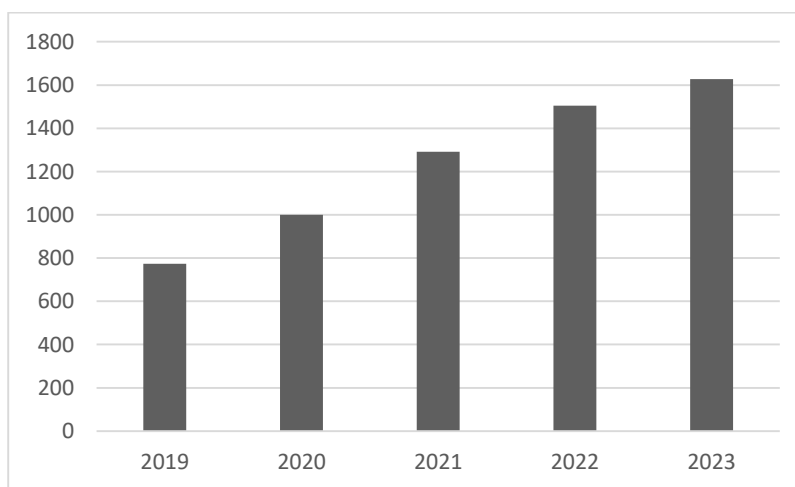
Data extraction focused on key metrics such as the number of literature reviews by year, country, category, and citation counts. The analysis combined descriptive statistics with network mapping to reveal thematic trends and relationships among keywords. This systematic and iterative approach ensured that the study’s findings were transparent, rigorous, and reproducible.

RESULTS

A comprehensive search in the Web of Science (WoS), using a search string focused on literature reviews and filtering by publication year (2019–2023), document type (Review article), and area (Education Educational Research), yielded 6,197 texts.

As illustrated in Graph 1, a Web of Science database analysis reveals a consistently growing annual distribution of literature reviews in education.

Graph 1. Distribution of reviews by year of publication.

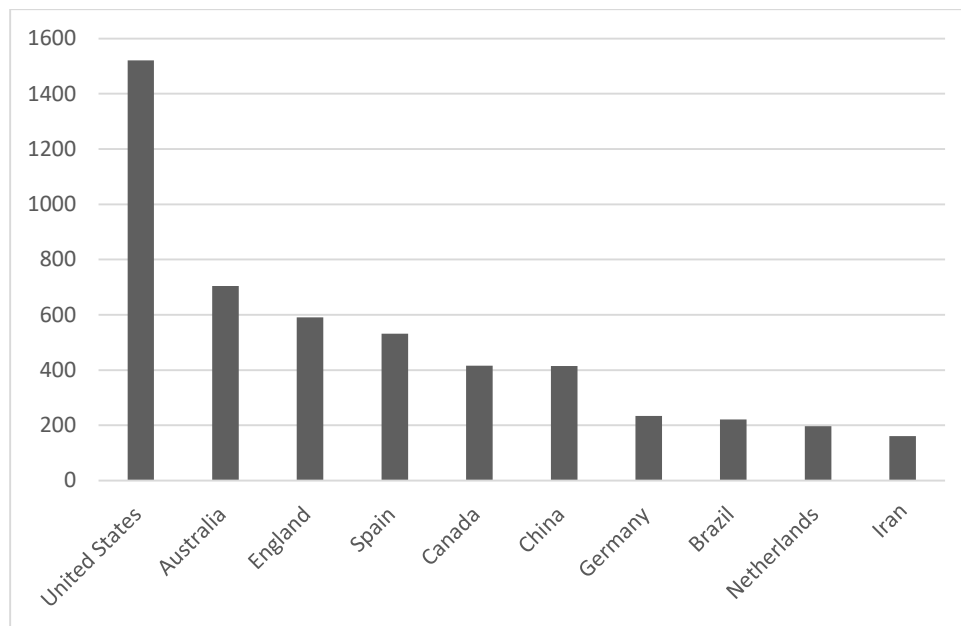


Source: authors from Web of Science data.



Another Web of Science analysis (Graph 2) reveals that the United States leads the countries publishing literature reviews in education, with 24.5% of the total publications, followed by Australia at 11.4% and England at 9.5%.

Graph 2. Distribution of reviews by country (top 10).



Source: authors from Web of Science data.

Regarding the WoS Categories with the greatest distribution of works included, Table 2 indicates that records classified under “Education Educational Research” (with the same name as the general area) constitute 69.02% of the dataset, while works in “Scientific Disciplines” and “Special Education” account for 23.85% and 12.59%, respectively.

Table 2. Distribution of frequency included by WoS Category (top 10).

Web of Science Category	Record Count	% of 6,197
Education Educational Research	4,277	69.02%
Education Scientific Disciplines	1,478	23.85%
Education Special	780	12.59%
Rehabilitation	493	7.95%
Health Care Sciences Services	356	5.74%
Public Environmental Occupational Health	278	4.49%
Nursing	243	3.92%



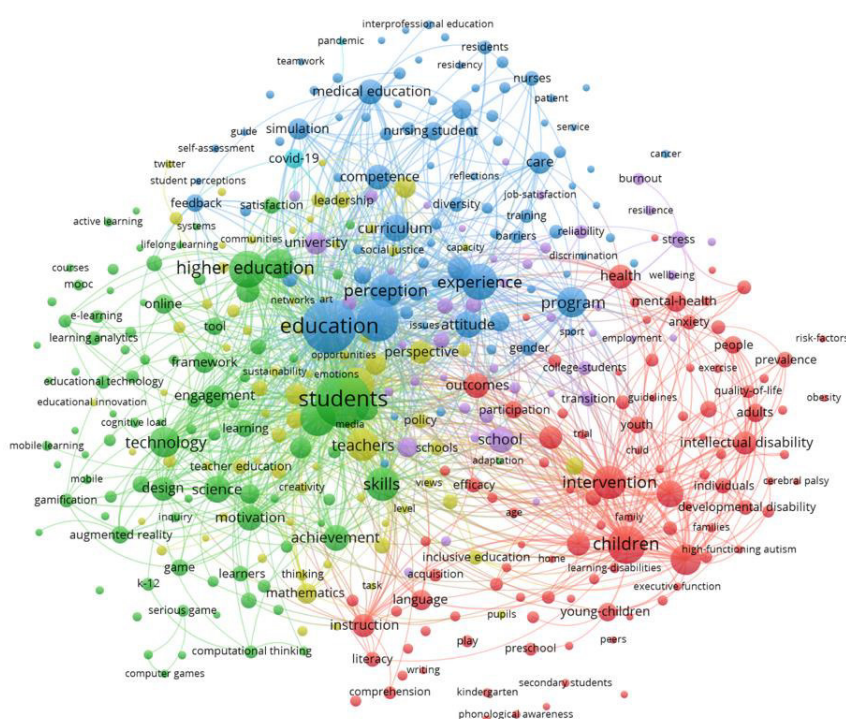
Web of Science Category	Record Count	% of 6,197
Psychology Developmental	196	3.16%
Psychiatry	130	2.20%
Computer Science Interdisciplinary Applications	128	2.07%

Source: Web of Science.

The study also analyzed the total number of keyword co-occurrences in all documents using VOSviewer. In the software tool network visualizations, each item is represented by a label and a circle, with both elements scaled according to the item's weight. Thus, items with greater weight appear larger. An item's color denotes its cluster membership, and lines connecting items indicate links, the connection or relationship between two items. (Van Eck & Waltman, 2023).

A minimum threshold of 20 occurrences was applied, and a rigorous vocabulary control process was implemented to exclude generic review-related terms (e.g., “meta-analysis”, “scoping review”, and “literature review”), which were analyzed separately. In addition, synonymous terms and variations in singular and plural forms were consolidated by editing the VOSviewer thesaurus file. The resulting co-occurrence network of 402 keywords is shown in Figure 1.

Figure 1. Network visualization of the co-occurrence of keywords.



Source: VOSviewer.



This visualization grouped the 402 keywords into five clusters based on their co-occurrence patterns. In Figure 1, five distinct clusters are observable within the keyword network.

The red cluster, comprising 103 items, prominently features the term “children” (522 occurrences, 319 links), followed by “intervention” (417 occurrences, 335 links) and “autism” (340 occurrences, 252 links). This cluster also includes additional terms such as “intellectual disability,” “health,” “mental health,” and “executive function.”

The green cluster, consisting of 93 items, emphasizes terms like “students” (1114 occurrences, 514 links), “higher education” (509 occurrences, 314 links), “skills” (400 occurrences, 330 links), and “technology” (340 occurrences, 301 links). Other important words in this cluster include “motivation,” “engagement,” “online,” “mobile learning,” and “serious games.”

The blue cluster, with 85 items, centers around the term “education” (1093 occurrences, 393 links) and highlights “impact” (620 occurrences, 388 links) and “experience” (468 occurrences, 346 links). Additional significant terms within this cluster are “program,” “curriculum,” “perception,” and “competence,” along with related health terms such as “medical education,” “nursing student,” and “medical student.”

The yellow cluster comprises 74 items and is characterized by the prominence of “knowledge” (440 occurrences, 356 links) and “teacher” (392 occurrences, 341 links). Other related terms in this cluster include “development-professional,” “implementation,” “perspective,” “inclusive education,” and “mathematics.”

Finally, the lilac cluster, containing 45 items, is defined by the term “school” (249 occurrences, 303 links), with additional noteworthy terms such as “stress,” “burnout,” “validity,” and “self-efficacy.”

In VOSviewer, an alternative to network visualization is density visualization, which uses a color gradient—from blue (low density) to yellow (high density)—to represent the local concentration of items (Van Eck & Waltman, 2023). Figure 2 reinforces highlighting keywords such as Education, students, higher Education, perception, experience, intervention, children, and autism, with yellow and larger labels indicating greater prominence.

[illegible]

Additionally, the frequency of literature review types was analyzed using keywords excluded from the previous visualizations (Table 3). Variations in singular, plural, and alternative spellings (e.g., “systematic review” versus “systematic literature review”) were consolidated. The results show that systematic reviews dominate with 52.39% of occurrences, followed by meta-analyses (18.33%), scoping reviews (13.23%), integrative reviews (1.35%), critical reviews (0.97%), and research reviews (0.81%).

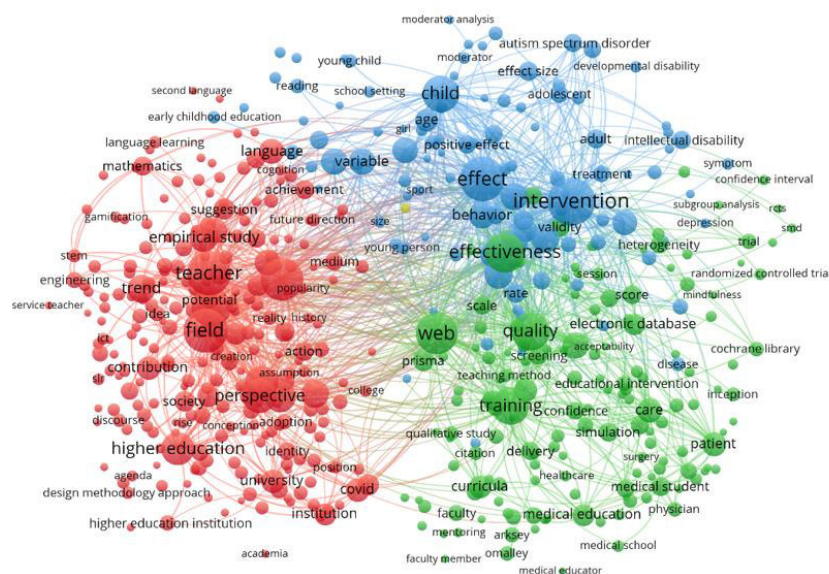
Keyword	Occurrence
systematic review	1283
meta-analysis	449
literature review	338
scoping review	324
integrative review	33
critical review	12
research review	10

A complementary analysis focused on the terms in the titles and abstracts (a supplementary file includes titles and abstracts for the 6,197 articles included in the study). With a threshold of 30 occurrences, VOSviewer identified 1,033 terms through binary counting, indicating the number of documents in which a term occurs at least once, then selecting the top 60%, amounting to 620 terms. (Van Eck & Waltman, 2023).



Researchers then refined the dataset by excluding recurring terms in the titles and abstracts related to methodological aspects (e.g., inclusion criteria, months, countries, extraction dates). In addition, the terms that indicated databases were excluded to carry out a separate occurrence analysis. Thus, the study of the network of occurrences in Figure 3 was based on 510 terms.

Figure 3. Network of occurrences of the terms of the publications in titles and abstracts.



Source: VOSviewer.

The resulting network (Figure 3) comprised three clusters. The red cluster featured terms such as “field” (977 occurrences), “teacher” (975), “perspective” (614), and “higher Education” (554), besides “COVID”, “mathematics”, and “empirical study”. The green cluster included prominent terms such as “effectiveness” (785), “web” (890), “quality” (754), and “training” (713), besides “medical education”, “curriculum”, “prisma”, and “randomized study”. Moreover, the blue cluster was characterized by terms such as “intervention (1153), “effect” (1005), “child” (682), “behavior” (358), and “variable” (356), besides “adolescent”, “effect size”, “autism”, and “intellectual disability”.

Comparing the occurrence networks derived from keywords (Figure 2) and titles and abstracts (Figure 3) revealed several common terms, including “intervention,” “child,” “teacher,” “perspective,” and “higher education.” Additionally, the analysis of titles and abstracts identified other terms—such as “effectiveness,” “behavior,” “field,” and “effect”—that were not as prominent in the keyword network.



Table 4 provides an overview of the occurrences of various databases mentioned in the titles and abstracts, with Web of Science (948) and Scopus (933) being the most frequently cited sources.

Table 4. Occurrences of the databases cited in terms of the titles and abstracts.

Bases	Occurrences
Web of Science	948
Scopus	933
Dimension	628
Pubmed	625
Eric	498
Psycoinfo	448
Google Scholar	398
Cinahl	383
Science Direct	171
Proquest	151
Medline	144
Ebsco	131
Scielo	64
DOAJ	18

Source: prepared by the authors with data from VOSviewer.

Considering that our search spanned a broad area of knowledge and focused solely on literature reviews, we did not perform bibliographic coupling, which would identify clusters of documents sharing the same citation base. While valuable for thematic exploration, this analysis was irrelevant to our methodological focus.

Finally, Table 5 analyzes the most cited reviews based on Web of Science data. The top-cited articles—such as Radianti et al. (2020) on immersive virtual reality in higher Education and Zawacki-Richter et al. (2019) on artificial intelligence in education—primarily focus on digital technologies, while others include themes such as blended learning, online teaching and learning, and ChatGPT. Only one of the revisions does not study a digital technology-related theme. This predominance underscores the contemporary relevance of these themes in educational research.



Table 5. Most Reviews on WoS

Title	Authors (year)	Journal (impact factor* – JCR)	Number of quotes
A systematic review of immersive virtual reality applications for Higher Education: Design elements, lessons learned, and research agenda	Radianti, J. et al. (2020)	Computers & Education (8,9 – Q1)	687
Systematic review of research on artificial intelligence applications in higher education - where are the educators?	Zawacki-Richter, O. et al.(2019)	International Journal of Educational Technology in Higher Education (8,6 – Q1)	668
Challenges in the online component of blended learning: A systematic review	Rasheed, R.; Kamsin, A.; Abdullah, N (2019)	Computers & Education (8,9 – Q1)	421
Identifying effective climate change education strategies: a systematic review of the research	Monroe, M.C. et al. (201)	Environmental Education Research (2,6 – Q1)	397
COVID-19 and teacher education: a literature review of online teaching and learning practices	Carrillo, C ; Flores, M.A. (2020)	European Journal of Teacher Education (3,0 – Q1)	392
How Many Ways Can We Define Online Learning? A Systematic Literature Review of Definitions of Online Learning (1988-2018)	Singh, V.; Thurman, A. (2019)	American Journal of Distance Education (1,2 – Q2)	366
Does online learning work better than offline learning in undergraduate medical education? A systematic review and meta-analysis	Pei, L.S.; Wu, H.B. (2019)	Medical Education Online (3,1 – Q1)	360
Technology acceptance model in educational context: A systematic literature review	Granic, A.; Marangunic, N. (2019)	British Journal of Educational Technology (6,7 – Q1)	350
What Is the Impact of ChatGPT on Education? A Rapid Review of the Literature	Lo, C.K. (2023)	Education Sciences (2,5 – Q1)	302
Immersive virtual reality as a pedagogical tool in education: a systematic literature review of quantitative learning outcomes and experimental design	Hamilton, D. et al. (2021)	Journal of Computers in Education (4,3 – Q1)	302

* Journal impact factor for 2023; **quartile classification



Overall, these results highlight publication trends and thematic clusters within educational literature reviews and demonstrate the methodological rigor of bibliometric analysis in mapping the field's evolution.

DISCUSSION

The trend for a consistent increase in the number of literature reviews on education, illustrated in Graph 1, reflects a growing academic and institutional interest in reviewing and synthesizing educational research, in parallel with an increasing emphasis on evidence-informed decision-making in education policy and practice. This expansion can be contextualized by international reports such as UNESCO's Global Education Monitoring Report (2023) and the OECD's Education at a Glance (2023), which highlight the rising demand for data-driven educational strategies. Furthermore, studies such as those of Paul and Criado (2020) and Snyder (2019) underscore the growing prominence and methodological diversification of literature reviews in education.

Graph 2 presents the countries that publish the most literature reviews on education, highlighting the dominance of English-speaking nations, with the United States, Australia, England, and Canada occupying the top positions. This result reflects the hegemony of academic production in English, which tends to receive greater visibility in international databases (Altbach, Reisberg, & Rumbley, 2019). It may also be related to the strong tradition in these countries of conducting systematic research and prioritizing literature reviews as a foundation for educational policy formulation and professional practice (Ball, 2012; Gough, Oliver, & Thomas, 2017).

In addition, the graph reveals the emergence of non-English-speaking countries such as China, Brazil, and Iran, suggesting a growing internationalization of educational research in diverse contexts. However, the data also underscores the unequal global distribution of knowledge production, with a strong concentration in developed countries. This imbalance might contribute to underrepresenting local realities and diverse educational contexts in global literature reviews.

Finally, the data suggests a possible relationship between the volume of literature reviews and the adoption of evidence-based educational policies, as countries with higher publication rates follow more evidence-informed approaches. This relationship highlights the interconnectedness of research and policy, reinforcing the



role of literature reviews in supporting informed decision-making in Education (OECD, 2022).

Table 2 presents how literature reviews on education are distributed across different Web of Science categories. The data provide insight into educational research's multidisciplinary nature while highlighting thematic priorities and intersections with other fields of knowledge.

Education Educational Research is the most dominant category, accounting for 69.02% of the records (4,277). This data suggests that most literature reviews are concentrated on general educational research.

Several other categories also appear with significant frequency, including *Education Scientific Disciplines* (23.85%), *Special Education* (12.59%), *Rehabilitation* (7.95%), *Health Care Sciences Services* (5.74%), *Public Environmental Occupational Health* (4.49%), and various subfields of psychology and health, such as *Developmental Psychology*, *Psychiatry*, and *Nursing*. These areas highlight the interdisciplinary nature of education, particularly in its intersection with health, psychology, and the natural sciences.

The network and density visualizations converge to highlight a set of central and transversal terms that structure educational research. Terms such as education, curriculum, students, and teachers appear prominently in both visualizations—either at the center of the network or in areas of high density—pointing again to general educational research. Key terms like technology and higher education also emerge as frequent and central. Together, these visual patterns indicate that recent literature reviews in education are oriented around concepts related to pedagogical practices, curriculum-related issues, the role of students in learning, and teacher education. These recurring terms function as structuring axes of the field, connecting different subareas.

Across the dataset, a recurring methodological vocabulary is also evident, reflecting the prevalence of quantitative and systematic approaches. Terms such as empirical study, field, variable, effectiveness, score, quality, training, intervention, RCT, database, screening, and validity point to consolidating scientifically rigorous review practices, especially systematic reviews and meta-analyses. This vocabulary suggests a growing emphasis on validating educational practices through structured evidence



synthesis, aligning with broader trends in evidence-informed decision-making in education. This broad methodological pattern is reflected in specific thematic clusters identified in the network and density visualizations, particularly those focused on educational interventions.

The network and density visualizations (Figures 1 and 2) reveal a key thematic cluster centered on interventions involving children, particularly in Special Education and mental health. Terms such as intervention, children, autism, intellectual disability, and inclusive education appear strongly linked, forming a cohesive group (represented in red in the network visualization). Ainscow (2020) emphasizes the importance of interventions to support students with intellectual disabilities in diverse and inclusive settings.

These terms also appear frequently in titles and abstracts and are especially concentrated in the blue cluster, which includes words such as effect, effectiveness, behavior, mental health, and intellectual disability. This cluster emphasizes intervention-focused literature, often aligned with systematic approaches to synthesize evidence.

The co-occurrence of keywords (Figures 1 and 2) such as intervention, intellectual disability, autism, and health also aligns with the classification of several literature reviews under categories such as Special Education, Health Care Sciences Services, and Public Environmental and Occupational Health. This thematic convergence underscores the interdisciplinary nature of research that addresses the educational needs of children with diverse developmental and health needs.

In this context, systematic and scoping reviews play a central role in assessing the effectiveness of interventions. Their primary purpose is to gather, synthesize, and critically evaluate evidence on what works, for whom, and under what conditions. These types of reviews identify strategies tested in various educational settings and highlight the most effective practices and the challenges faced in implementation (Arksey & O'Malley, 2005; Munn et al., 2018; Petticrew & Roberts, 2006). By analyzing available studies, literature reviews help reduce duplication of effort, support better-informed decision-making, and promote more efficient allocation of resources (Ganeshkumar & Gopalakrishnan, 2013; Gough, Oliver, & Thomas, 2017).



In education, a wide range of interventions has been systematically reviewed. Examples include programs focused on anger management in children (Janeaim et al., 2024), enhancing creativity (Ruiz-del-Pino et al., 2022), promoting social behavior (Ledford & Pustejovsky, 2023), and improving executive functions in school-age children (Özcan et al., 2024). Literature reviews are essential for developing effective interventions and consolidating evidence-based educational practices.

Beyond supporting the implementation of tested strategies, reviews help identify knowledge gaps and guide future research. They offer insights into the positive outcomes of interventions, their limitations, and the conditions under which they are most effective (Paré et al., 2015; Saini & Shlonsky, 2012). This contribution is particularly relevant for formulating evidence-informed public policies, ensuring that childhood education programs are grounded in scientifically validated results. Review reviews enhance the reliability of conclusions drawn from existing research by critically evaluating the internal and external validity of primary studies (Higgins et al., 2022). As such, literature reviews elevate academic debate and help ensure that interventions with children are conducted ethically, safely, and scientifically rigorously.

Although the previous discussion focuses on interventions involving children—particularly within inclusive and special education contexts—similar methodological concerns and technological innovations also appear prominently in higher education settings. For instance, the emphasis on evidence-based practices carries through to online learning, simulation, and teacher training discussions. In both contexts, literature reviews are used to assess the effectiveness of practices, map emerging trends, and guide the implementation of pedagogical innovations.

Table 5, of the most cited systematic reviews, adds analytical depth to this discussion by highlighting the thematic influence and scholarly impact of recent literature reviews in education. It reveals which topics are most frequently addressed and which are shaping the field globally.

A striking feature is the predominance of digital and technological themes. Of the ten most cited reviews, nine focus on educational technologies, including virtual reality, artificial intelligence, online learning, blended learning, and generative AI tools like ChatGPT. This number reinforces what the network and density visualizations also



suggested: the increasing importance of digital technologies in contemporary educational research.

Several of these reviews have achieved significant academic impact. For instance, Radianti et al. (2020) conducted a systematic review of virtual reality in higher education, now cited over 680 times. Zawacki-Richter et al. (2019) reviewed artificial intelligence in education and reached a similar citation level. More recently, Lo (2023) published a rapid review on the impact of ChatGPT in Education, which reached over 300 citations, demonstrating the rapid uptake of generative AI as a research topic.

The green cluster in the network visualization (Figure 1) reinforces this trend, highlighting themes such as technology, online learning, engagement, STEM, games, motivation, and mobile learning. These terms reflect expanding research on digital education, active learning, gamification, and student engagement in technology-rich environments. In parallel, the density visualization reveals the emergence of specialized and innovative areas—such as augmented reality, computational thinking, and game-based learning—which, although less frequent, indicate growing scholarly interest in STEM education and pedagogical innovation.

These developments are particularly relevant in higher education, where the adoption of new technologies has been most rapid. Literature reviews in this space often explore how digital tools influence student motivation, engagement, and the development of academic or professional competencies. The reviews also map the use of technologies across education levels and help evaluate their pedagogical value, responding to the need for evidence-based guidance in the face of constant technological change (Munn et al., 2018).

The blue cluster also supports this reading, pointing to reviews focused on experience and impact—particularly within medical education. In this field, technology-enhanced learning environments and simulation tools are increasingly central.

Additionally, a red cluster emerges in the title and abstract analysis, highlighting terms such as teacher, higher education, field, empirical study, perspective, identity, and trend. This cluster appears more conceptually oriented, emphasizing teacher education, epistemology, academic discourse, and broader social and institutional themes in higher education. The combination of these terms suggests that literature reviews are focused



on evaluating technologies and critically reflecting on teachers' professional identities, trends in educational research, and the field's evolution.

These findings also have practical implications for teacher training curricula, suggesting that future programs should increasingly emphasize digital competencies, inclusivity, and attention to student wellbeing—themes that are closely associated to the use of emerging technologies and evolving educational demands.

The high visibility of the most cited reviews is also closely linked to their publication in high-impact journals, such as *Computers & Education*, *IJETHE* (International Journal of Educational Technology in Higher Education), and *Medical Education Online*. These Q1-ranked journals signal the prestige and international reach of research at the intersection of education and technology.

In sum, this analysis highlights the strategic role of systematic reviews in rapidly evolving areas of educational research. These reviews are tools for mapping research trends, identifying emerging practices, and consolidating evidence to support educational innovation. Their methodological rigor and synthesis capacity are essential for advancing academic understanding and evidence-informed decision-making.

Moreover, the key terms in the most cited reviews—intervention, effectiveness, online learning, acceptance, training, curriculum, AI, and virtual reality—align with the most prominent terms in the network and density visualizations. This alignment confirms that the most impactful literature reviews are anchored in the main thematic clusters shaping contemporary educational research, reinforcing patterns identified through co-word analysis (Zupic & Čater, 2015; Paul & Criado, 2020).

The frequent appearance of technology in higher education also extends into professional health education, where literature reviews frequently explore simulation, curriculum development, and training practices (Radianti et al., 2020; Zawacki-Richter et al., 2019). Furthermore, emotional and psychological wellbeing—though more visible in medical contexts—shares conceptual space with themes of engagement and inclusion discussed earlier. These overlaps illustrate how different educational domains respond to similar challenges, using systematic reviews to bridge practice, innovation, and care (Durlak et al., 2011; Saini & Shlonsky, 2012).

A distinct thematic cluster related to health and medical education emerges in



the analysis, particularly within the light blue cluster of the network visualization. Terms such as medical education, curriculum, simulation, COVID-19, residents, and nursing students indicate a growing focus on professional training in the health sciences. This trend reflects increasing attention to clinical simulation and interprofessional education and the impact of the COVID-19 pandemic on healthcare education (Munn et al., 2018; Higgins et al., 2022).

The density visualization further reinforces this trend, highlighting a group of related terms—mental health, burnout, resilience, and wellbeing—which, although less frequent, appear consistent. These keywords point to the emergence of emotional and psychological wellbeing as a complementary area of concern within educational research (Durlak et al., 2011), particularly in fields with high stress and performance demands, such as medical training.

The title and abstract analysis confirm the centrality of medical education and health-related training in the dataset. The green cluster features terms such as training, medical education, simulation, patient, electronic database, and RCT (randomized controlled trial). This combination signals a strong presence of methodologically rigorous studies, often grounded in evidence-based approach, rigorously designed studies, and technical vocabulary aligned with international review standards (Moher et al., 2009; Higgins et al., 2022).

These findings suggest that health education has become a significant and technologically advanced area within educational research, marked by its scientific rigor and attention to human concerns such as wellbeing and resilience. Integrating measurable outcomes with psychosocial dimensions reflects a more holistic approach to research and practice, particularly in high-stakes fields. This dual emphasis—on effectiveness and care—illustrates the evolving role of literature reviews in shaping complex educational responses (Petticrew & Roberts, 2006; Mallett et al., 2012).

Table 4, which presents the databases used in the literature reviews, adds an important dimension to the discussion by revealing how scientific knowledge is filtered, legitimized, and accessed in the most influential educational reviews. Web of Science (WoS) and Scopus stand out significantly, with 948 and 933 occurrences, respectively. These multidisciplinary and highly selective databases are known for their rigorous



indexing criteria and focus on high-quality international publications. As previously discussed, their dominance reinforces the hegemony of English-language research and journals in Global North countries. As Mongeon and Paul-Hus (2016) argue, these databases shape access to global science by structurally favoring research from the Global North. At the same time, the limited representation of regional databases compromises the epistemological diversity of literature reviews, since database selection directly influences the results, conclusions, and potential biases of the reviews.

Table 3 provides an opportunity to reflect on which review formats are most used and valued in contemporary educational research. The data reinforce patterns observed in the visualizations and tables, particularly those highlighting thematic clusters and citation frequency.

Systematic reviews appear to be the most common type, with 1,283 occurrences, indicating that this is the field's most widely adopted and legitimized approach. This finding aligns directly with the most cited reviews, predominantly systematic, and reflects the influence of the evidence-based science discourse. Gough, Oliver, and Thomas (2017) emphasize the rigor, reproducibility, and reliability associated with systematic reviews. However, the large number of studies labeled as "systematic" may also reflect a tendency to use the term loosely—without full adherence to the methodological standards established by organizations such as the UK Cochrane Centre and the Joanna Briggs Institute (Arksey & O'Malley, 2005). It is important to distinguish between applying systematic procedures in a literature review and conducting a systematic literature review, which requires strict methodological protocols, selection criteria, and reporting standards.

The frequent but often inconsistent use of the term "systematic review" raises important methodological concerns. Labeling a review as systematic without following rigorous procedures—such as predefined protocols, transparent inclusion criteria, and critical appraisal—may compromise the findings' reliability and affect how scholars and policymakers perceive them. Mallett et al. (2012) and Moher et al. (2009) argue that methodological clarity is essential for academic credibility and the uptake of evidence in policy and practice. Mislabeling can lead to inflated claims of rigor, limit replicability, and hinder the advancement of genuinely evidence-informed education.



Meta-analyses, with 449 occurrences, are in second place, indicating a strong valuation of quantitative synthesis methods. Meta-analyses are particularly common in studies that assess the effectiveness of interventions, especially in medical, special, and psychological education—areas also prominent in the keyword visualizations. Borenstein et al. (2021) argue that meta-analysis is a high-impact tool for generalizing educational findings across different studies and contexts.

By contrast, with only 33 occurrences, integrative reviews are significantly less used. This trend may indicate a preference within the academic community for more structured and verifiable approaches, such as systematic reviews and meta-analyses. However, it also suggests a potential gap in literature, as integrative reviews allow for theoretical, epistemological, and critical analyses. As Whittemore and Knafl (2005) have argued, integrative reviews are particularly valuable for constructing theoretical models and advancing conceptual understanding in education.

The discussion of the findings of this analysis points to a dynamic environment in educational research synthesis. Systematic reviews dominate the preferred methodological format, particularly in studies on effectiveness and intervention. Technological themes are central, especially in higher and professional education, while inclusive education and emotional wellbeing are emerging as cross-cutting concerns. The review landscape is shaped by epistemological trends and structural factors, including language, databases, and publication venues—elements that collectively define which knowledge is synthesized and disseminated.

CONCLUSION

This study presented a bibliometric analysis of educational literature reviews based on publications indexed in the Web of Science database between 2019 and 2023. The findings reveal an expanding and increasingly structured environment of research synthesis, in which literature reviews play a central role in consolidating evidence, mapping emerging themes, and guiding educational policy and practice. Thematic clusters and citation data point to the prominence of digital technologies—such as online learning, artificial intelligence, and virtual reality—particularly in higher education and professional training. At the same time, areas such as inclusive Education, Medical Education, emotional wellbeing, and evidence-based interventions for children



signal the growing interdisciplinarity of the field.

Methodologically, the study highlights the dominance of systematic reviews and meta-analyses, which account for over 70% of the sample. These formats strongly emphasize rigor and replicability but suggest the potential underusing of more critical, integrative, and narrative approaches, which could offer valuable theoretical contributions. Most reviews are grounded in major international databases such as Web of Science, Scopus, ERIC, and PubMed, reinforcing the global and English-language orientation of knowledge production in education. This pattern raises concerns about epistemological diversity and the underrepresentation of regional and Global South perspectives.

The study contributes to the field by offering a macro-level overview of how literature reviews shape educational research. It provides useful insights for researchers seeking to identify gaps, define future research topics, and select appropriate review methodologies. It also holds practical value for graduate programs, funding agencies, and policy actors interested in evidence-informed decision-making.

Nonetheless, the research has some limitations. It focuses exclusively on the Web of Science database, excluding other important sources such as Scopus, ERIC, and SciELO. In addition, the analysis is primarily quantitative and exploratory, without a deeper qualitative assessment of review quality or methodological adherence. Future studies should consider expanding the database scope, incorporating comparative analyses across disciplines or regions, and conducting more fine-grained evaluations of how "systematic reviews" are defined and executed. Exploring the use of integrative and narrative review types and mapping the research methodologies cited within educational reviews could offer new perspectives on the evolution and orientation of the field.

In this sense, the literature review study is an indicator of contemporary educational research, revealing how the thematic and methodological architecture of knowledge is being structured, legitimized, and mobilized. Strengthening this line of inquiry may promote more inclusive, critical, and methodologically diverse approaches to knowledge synthesis in education.

In line with the works of Snyder (2019) and Paul and Criado (2020), this study



advances the methodological understanding of literature reviews by identifying dominant practices, thematic imbalances, and underexplored formats within the educational field.

Funding

This research was funded by the Research Incentive Plan (PIPEq) of the Pontifical Catholic University of São Paulo (PUC-SP), by the National Council for Scientific and Technological Development (CNPq), and by the Coordination for the Improvement of Higher Education Personnel (CAPES).

WORKS CITED

- Ainscow, M. (2020). Promoting inclusion and equity in education: Lessons from international experiences. *Nordic Journal of Studies in Educational Policy*, 6(1), 7–16.
- Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2019). *Trends in global higher education: Tracking an academic revolution*. UNESCO.
- Antoninis, M., Alcott, B., Al Hadheri, S., April, D., Fouad Barakat, B., Barrios Rivera, M., ... & Weill, E. (2023). *Global education monitoring report 2023: Technology in education: A tool on whose terms?* UNESCO.
- Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32.
- Ball, S. J. (2012). *Global education Inc.: New policy networks and the neo-liberal imaginary*. Routledge.
- Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2021). *Introduction to meta-analysis*. John Wiley & Sons.
- Campbell Collaboration. Methods Group. (2023). *Methodological expectations of Campbell Collaboration intervention reviews (MECCIR): 2023 update*. Campbell Collaboration. <https://osf.io/kcspx/>
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405–432.



- Gopalakrishnan, S., & Ganeshkumar, P. (2013). Systematic reviews and meta-analysis: Understanding the best evidence in primary healthcare. *Journal of Family Medicine and Primary Care*, 2(1), 9–14.
- Gough, D., Oliver, S., & Thomas, J. (2017). *An introduction to systematic reviews* (2nd ed.). SAGE.
- Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, 26(2), 91–108.
- Hammersley, M. (2002). *Educational research, policymaking and practice*. Paul Chapman Publishing.
- Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (Eds.). (2022). *Cochrane handbook for systematic reviews of interventions* (2nd ed.). Wiley.
- Janeaim, N., Suwanwong, C., Prasittichok, P., Mohan, K. P., & Hudrudchai, S. (2024). Effectiveness of educational interventions for improving rabies prevention in children: A systematic review and meta-analysis. *Journal of Education and Health Promotion*, 13(1), 497.
- Ledford, J. R., & Pustejovsky, J. E. (2023). Systematic review and meta-analysis of stay-play-talk interventions for improving social behaviors of young children. *Journal of Positive Behavior Interventions*, 25(1), 65–77.
- Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: Advancing the methodology. *Implementation Science*, 5, 1–9.
- Lo, C. K. (2023). What is the impact of ChatGPT on education? A rapid review of the literature. *Education Sciences*, 13(4), 410.
- Mallett, S., Hagen-Zanker, J., Slater, R., & Duvendack, M. (2012). The benefits and challenges of using systematic reviews in international development research. *Journal of Development Effectiveness*, 4(3), 445–455.
- Mattar, J., & Ramos, D. K. (2021). *Metodologia da pesquisa em educação: Abordagens qualitativas, quantitativas e mistas*. Almedina Brasil.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLOS Medicine*, 6(7), e1000097.



- Mongeon, P., & Paul-Hus, A. (2016). The journal coverage of Web of Science and Scopus: A comparative analysis. *Scientometrics*, 106(1), 213–228.
- Munn, Z., Peters, M. D., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology*, 18, 1–7.
- OECD. (2022). *Evidence-informed policy making in education: Looking back and looking forward*. <https://www.oecd.org>
- OECD. (2023). *Education at a glance 2023: OECD indicators*. Organisation for Economic Co-operation and Development. <https://doi.org/10.1787/d7f76adc-en>
- Okoli, C. (2015). A guide to conducting a standalone systematic literature review. *Communications of the Association for Information Systems*, 37.
- Özcan, M. Ş., Göksun, T., & Kisbu, Y. (2024). The impact of learning to code on higher-order executive functions: A systematic review of the literature. *Journal of Research on Technology in Education*, 1–29.
- Paré, G., Trudel, M. C., Jaana, M., & Kitsiou, S. (2015). Synthesizing information systems knowledge: A typology of literature reviews. *Information & Management*, 52(2), 183–199.
- Paul, J., & Criado, A. R. (2020). The art of writing literature review: What do we know and what do we need to know? *International Business Review*, 29(4), 101717.
- Petticrew, M., & Roberts, H. (2006). *Systematic reviews in the social sciences: A practical guide*. Blackwell Publishing.
- Radianti, J., Majchrzak, T. A., Fromm, J., & Wohlgenannt, I. (2020). A systematic review of immersive virtual reality applications for higher education: Design elements, lessons learned, and research agenda. *Computers & Education*, 147, 103778.
- Ruiz-del-Pino, B., Fernández-Martín, F. D., & Arco-Tirado, J. L. (2022). Creativity training programs in primary education: A systematic review and meta-analysis. *Thinking Skills and Creativity*, 46, 101172.
- Saini, M., & Shlonsky, A. (2012). *Systematic synthesis of qualitative research*. Oxford University Press.
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339.



- UNESCO. (2023). *Global education monitoring report 2023: Technology in education – A tool on whose terms?* United Nations Educational, Scientific and Cultural Organization. <https://unesdoc.unesco.org/ark:/48223/pf0000385723>
- van Eck, N. J., & Waltman, L. (2023). *VOSviewer manual* (Version 1.6.19). Centre for Science and Technology Studies, Leiden University.
https://www.vosviewer.com/documentation/Manual_VOSviewer_1.6.19.pdf
- Vosgerau, D. S. A. R., & Romanowski, J. P. (2014). Estudos de revisão: Implicações conceituais e metodológicas. *Revista Diálogo Educacional*, 14(42), 165–190.
- Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, 52(5), 546–553.
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education—Where are the educators? *International Journal of Educational Technology in Higher Education*, 16(1), 1–27.
- Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, 18(3), 429–472.