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Mapping and Diagnosing the Development of Philosophy of Education in Primary Education: A Bibliometric Analysis

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ABSTRACT

This study analyzes the development of philosophy of education research at the primary education level through a bibliometric approach. Data were obtained from the Scopus database using systematic search criteria, resulting in 573 articles published between 2016 and 2025. The analysis was conducted using R software through the bibliometrix package and the Biblioshiny interface to identify trends in scientific production, conceptual structure, and thematic evolution. The results indicate a significant increase in the number of publications, with an annual growth rate of 31.3%, reflecting growing academic interest in this field. However, the findings also reveal disparities in scientific production across countries, low levels of international collaboration, and fragmentation in the conceptual structure. Conceptual analysis highlights the dominance of core themes such as epistemology, ethics, and phenomenology, as well as the emergence of contemporary themes such as critical thinking and sustainability. Thematic evolution indicates a shift from classical philosophical approaches toward more contextual and applied orientations in education. This study contributes by providing an integrated mapping and diagnosis of the field's development and emphasizes the importance of strengthening conceptual coherence, global collaboration, and more systematic research directions to support the advancement of philosophy of education in primary education.

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INTRODUCTION

In the context of 21st-century education, critical, reflective, and ethical thinking skills have become key competencies in addressing global complexity (Balart et al., 2026; W. N. A. Fauzi et al., 2025; Sun et al., 2020). Philosophy of education plays a role as a conceptual foundation that

shapes the direction of educational policies, practices, and goals (Pinelli, 2026). At the primary education level, this role becomes increasingly crucial as it is directly related to the formation of students' cognitive structures and values from an early stage (Muñoz-Ramírez et al., 2025). Recent empirical findings indicate that the integration of philosophical perspectives significantly contributes to the enhancement of higher-order thinking skills as well as moral dimensions in learning (Tuero-O´Donnell et al., 2026). Therefore, philosophy of education is no longer positioned as an abstract discourse but rather as a reflective framework that is essential in responding to contemporary educational challenges.

The development of research in the field of philosophy of education shows an increasing trend in recent years, along with growing attention to the role of philosophy in primary education (Alam & Limo, 2026). The existing studies cover a broad spectrum, ranging from philosophical foundations to their application in educational practice. However, this development has not been fully accompanied by adequate scholarly consolidation. Several studies indicate the presence of conceptual fragmentation, disparities in scientific production across countries, and low levels of international collaboration that hinder knowledge integration (Chen & Hitt, 2021). In addition, studies that systematically map the conceptual structure and thematic evolution of philosophy of education in primary education remain limited (Alarcón Leiva, 2024), thereby highlighting a significant research gap and the urgent need for a bibliometric approach capable of comprehensively diagnosing the development of the field, particularly in identifying structural gaps, guiding research priorities, and informing evidence-based educational policy and practice in primary education.

These limitations not only indicate the presence of conceptual fragmentation but also reveal the absence of an analytical approach capable of systematically integrating multiple dimensions of the development of philosophy of education research simultaneously. Most existing studies still tend to examine scientific production, conceptual structure, and thematic evolution separately, resulting in a fragmented understanding of the relationships among these dimensions and limiting the ability to comprehensively diagnose the development of the field. Consequently, the intellectual direction of philosophy of education research at the primary education level has not yet been fully mapped, both in terms of knowledge dynamics and the interconnections among the concepts shaping its evolution. This condition underscores the urgent need for an integrative analytical framework capable of linking these dimensions in a more systematic and comprehensive manner to generate a deeper understanding of the structural patterns and developmental trajectories of the field.

Based on these gaps, this study develops an integrative bibliometric approach that combines the analysis of scientific production, conceptual structure, and thematic evolution within a unified analytical framework. This approach enables a more systematic identification of the patterns, dynamics, and structural characteristics of the field while simultaneously providing a comprehensive diagnosis of conceptual fragmentation, disparities in scientific production, and thematic shifts that have previously been examined in a fragmented manner. By integrating these dimensions, this study offers evidence-based insights that can inform educational policy, guide future research priorities, and support strategic decision-making in primary education systems. Furthermore, by focusing specifically on the primary education level, this study provides a more contextualized understanding of the role of philosophy of education in shaping students' cognitive foundations, ethical awareness, and reflective capacities from an early stage. In addition, this study expands the global perspective by highlighting Indonesia's prominent position within the landscape of scientific production, thereby contributing to a broader understanding of the

geographical distribution and developmental direction of philosophy of education research at the international level.

This study aims to comprehensively analyze the development of philosophy of education research at the primary education level through a bibliometric approach. Theoretically, this study contributes to strengthening the conceptual coherence and intellectual integration of the field, while practically enhancing the analytical foundation for the development of primary education that is more reflective, adaptive, inclusive, and sustainable. To achieve this objective, this study addresses three main research questions: (1) how has scientific production in philosophy of education research at the primary education level developed, (2) what conceptual structures and key themes shape this field, and (3) how have thematic evolution and research trends in this area progressed.

METHOD

This study employs a bibliometric approach to map and evaluate the development of philosophy of education research at the primary education level based on data obtained from the Scopus database. Bibliometrics is a quantitative technique that analyzes the external characteristics of scientific publications, such as citations, keywords, and author collaboration, to identify patterns, trends, and the intellectual structure of a research field (Van Eck et al., 2010; Wang et al., 2020). This approach enables a systematic exploration of research development dynamics, including thematic evolution and conceptual relationships among topics (Koskinen et al., 2008; Wang & Li, 2016).

The analysis was conducted using R software through the bibliometrix package with the Biblioshiny interface, which allows comprehensive and reproducible data processing (Aria & Cuccurullo, 2017). The research process includes stages of data collection, screening, extraction, and synthesis to provide an overall picture of the development of the field under study. The analysis covers scientific production, geographic distribution, citation analysis, as well as network and thematic mapping, thereby representing the intellectual, conceptual, and evolutionary structure of the field in a systematic manner.

Literature Search and Data Collection

This study began with a document search in the Scopus database using a combination of keywords systematically constructed through the Boolean operators AND and OR. The search was focused on the title, abstract, and keywords fields using the following query: TITLE-ABS-KEY (("philosophy of education" OR "educational philosophy" OR philosophical) AND (primary OR elementary)). The initial search yielded 5,365 documents.

Subsequent data screening was conducted systematically to ensure the relevance, consistency, and quality of the dataset in accordance with the objectives of the study. The screening process involved publication year filtering, followed by refinement based on subject area, document type, source type, language, and publication stage criteria available in the Scopus database. Limiting the publication period to 2016–2025 resulted in 2,877 documents. Further refinement using criteria including subject areas (Arts, Social Sciences, and Psychology), document type (articles), source type (journals), English language, and final publication stage

produced a final dataset of 573 articles for bibliometric analysis. The overall process of identification, screening, refinement, and inclusion of the final dataset is presented in Figure 1.

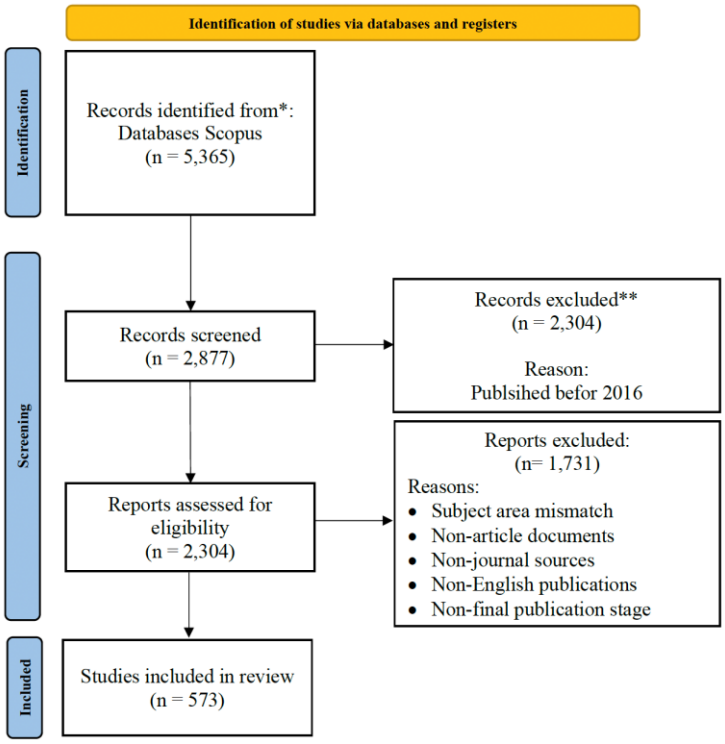

Figure 1. PRISMA flow

Figure 1 illustrates the systematic process of data identification, filtering, refinement, and final inclusion conducted using the Scopus database. The refinement process was performed through the Scopus filtering features to ensure the consistency, relevance, and reliability of the dataset used in the bibliometric analysis.

Although this study relies solely on the Scopus database, this selection is based on its broad coverage and the completeness of citation data, which are capable of comprehensively representing the research landscape (W. Fauzi et al., 2025; Shen & Ho, 2020). In addition, Scopus provides standardized metadata that are compatible with bibliometric analysis using R software, particularly through the bibliometrix package and the Biblioshiny interface. This consideration is also supported by the limitations of cross-database integration within the bibliometric system used, making the use of a single consistent database more appropriate for ensuring the validity and reliability of the analysis.

To provide a more systematic understanding of the analytical procedures employed in this study, the bibliometric analysis framework, including the types of analysis, indicators, and analytical purposes, is presented in Table 1.

Table 1. Bibliometric analysis framework

Analysis Type	Indicators	Purpose
Scientific Production Analysis	Annual publications, country productivity, author productivity	Identify publication growth patterns and global research distribution
Citation Analysis	Most globally cited documents	Examine scientific impact and influential publications within the field
Conceptual Structure Analysis	Word cloud, co-occurrence network	Identify dominant concepts, thematic relationships, and conceptual structures
Thematic Mapping Analysis	Centrality and density of themes	Analyze the development, maturity, and positioning of research themes
Thematic Evolution Analysis	Trend topics over time	Examine shifts and evolution of research themes across periods
Collaboration Analysis	International co-authorship	Evaluate the extent of global scholarly collaboration within the field

Data Extraction, Loading, and Processing

A total of 573 articles that passed the screening stage, as presented in Figure 1, were extracted from the Scopus database in CSV format to ensure the completeness and consistency of metadata. The data were then imported into the analytical environment using R software for cleaning and standardization processes, which included duplicate checking, normalization of author names and keywords, and adjustment of metadata formats. This stage aims to enhance the accuracy and reliability of the analysis, ensuring that the data are optimally structured and ready to be analyzed in mapping the scientific, conceptual, and thematic structures in a systematic manner.

Bibliometric Analysis and Software

A total of 573 articles that passed the screening stage, as presented in Table 1, were extracted from the Scopus database in CSV format to ensure the completeness and consistency of metadata. The data were then imported into the analytical environment using R software through the bibliometrix package, which enables systematic and reproducible data processing. The processing stage includes data cleaning and standardization, including duplicate checking, normalization of author names and keywords, and adjustment of metadata formats. This stage aims to enhance the accuracy and reliability of the analysis, ensuring that the data are optimally structured and ready to be analyzed in mapping the scientific, conceptual, and thematic structures in a comprehensive manner.

FINDINGS AND DISCUSSION

This bibliometric study analyzes 573 articles published between 2016 and 2025 and reveals a substantial increase in philosophy of education research at the primary education level, as presented in Table 2. The annual growth rate of 31.3% indicates a significant acceleration of scholarly attention over the past decade, reflecting the increasing recognition of philosophy as an important foundation for addressing contemporary educational challenges in primary education. The distribution of publications across 396 journals demonstrates the broad and multidisciplinary scope of the field, while the average document age of 3.85 years confirms the dominance of recent

and continuously developing literature. Furthermore, the average of 7.70 citations per article suggests that the scientific influence of the field is still evolving and has not yet reached a fully consolidated stage. The substantial number of references used across the analyzed documents (41,753 references) also indicates a strong interconnectedness with prior scholarly work and highlights the cumulative nature of knowledge development within the field.

The dataset involves contributions from 1,171 authors, with an average of 2.08 authors per article and an international collaboration rate of 14.14%, indicating that global scholarly collaboration in this field remains relatively limited. This condition suggests that the expansion of scientific production has not yet been fully accompanied by the strengthening of cross-national research networks and international intellectual integration. In addition, the dominance of author keywords over Keywords Plus reflects the high variability of research orientations and further confirms the fragmented conceptual structure characterizing the field. The exclusive focus on journal articles strengthens the consistency, credibility, and scientific rigor of the analyzed publications. Overall, these findings confirm that philosophy of education research at the primary education level is experiencing rapid quantitative growth; however, the field still faces important challenges related to conceptual coherence, international collaboration, and the consolidation of its intellectual structure.

Table 2. Main information

Description	Results
Main information about data	
Timespan	2016:2025
Sources (Journals, Books, etc)	396
Documents	573
Annual growth rate %	31,3
Document average age	3,85
Average citations per doc	7,702
References	41753
Document contents	
Keywords plus (id)	517
Author's keywords (de)	2507
Authors	
Authors	1171
Authors of single-authored docs	309
Authors collaboration	
Single-authored docs	312
Co-Authors per Doc	2,08
International co-authorships %	14,14
Document types	
Article	573

How Has Scientific Production Developed in Philosophy of Education Research at The Primary Education Level?

The analysis of annual scientific production in Figure 2 demonstrates a substantial and continuous increase in philosophy of education research at the primary education level during the period 2016–2025. The number of publications increased from only 10 articles in 2016 to 116 articles in 2025, reflecting an almost elevenfold expansion within a decade. This pattern indicates that philosophy of education has gained increasing scholarly attention as contemporary educational discourse places greater emphasis on reflective, ethical, critical, and learner-centered approaches in primary education. The rapid growth of publications also suggests that philosophy of education is increasingly positioned not merely as a theoretical foundation but as a relevant framework for addressing emerging educational challenges and transformations in elementary schooling.

The observed growth pattern further reveals three distinct phases of development. The initial phase (2016–2018) was characterized by relatively low and fluctuating publication output, indicating that research in this field was still limited and had not yet reached strong scholarly consolidation. The transitional phase (2019–2021) demonstrated more stable growth, reflecting the gradual expansion of academic interest and thematic diversification. Subsequently, the acceleration phase (2022–2025) was marked by a sharp and sustained increase in publication output, reaching its highest point in 2025. This acceleration suggests the emergence of stronger global academic engagement with philosophy of education, particularly in relation to critical thinking, sustainability, ethics, and contextual educational approaches. Overall, these findings confirm that philosophy of education research at the primary education level has not only experienced significant quantitative growth but has also entered a more intensive and strategically important phase within contemporary educational research.

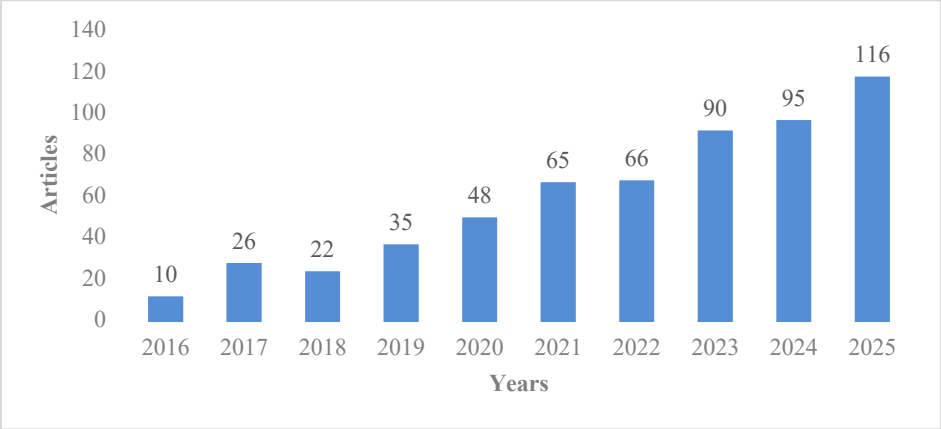

Figure 2. Annual scientific production

In line with these dynamics, the distribution of scientific production by country in Figure 3 demonstrates a geographically uneven pattern characterized by the strong dominance of several leading countries. Indonesia occupies the highest position with 179 publications, followed by the United Kingdom (138) and the United States (109). This concentration of scientific production reflects the stronger research capacity and publication ecosystems of these countries, which may

be associated with national research policies, institutional publication demands, the expansion of higher education systems, and the increasing emphasis on international academic visibility through indexed publications. In the context of Indonesia, the high publication output may also indicate the growing academic interest in educational philosophy and reflective pedagogical discourse, particularly in response to contemporary educational transformation and curriculum development within primary education.

Meanwhile, countries such as Canada, Ukraine, and Australia demonstrate moderate levels of contribution, whereas most other countries show relatively limited productivity, with only one to five publications. This uneven distribution confirms that philosophy of education research at the primary education level remains geographically concentrated and structurally unequal within the global scholarly landscape. Such disparities indicate that the production of knowledge in this field is still dominated by countries with relatively established academic infrastructures and stronger access to international publication networks, while many regions remain underrepresented. Consequently, the global development of philosophy of education research risks becoming less representative of diverse educational contexts and philosophical perspectives if broader international collaboration and more inclusive scholarly participation are not systematically strengthened.

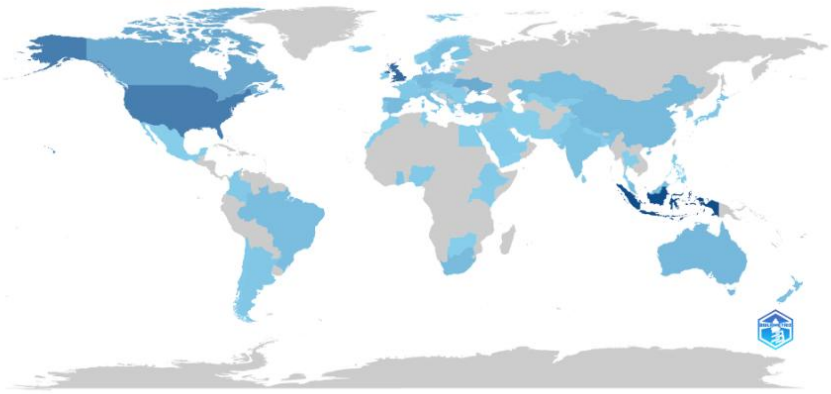

Figure 3. Countries' scientific production

The dominance observed at the country level is not accompanied by a similar concentration at the individual author level, as illustrated in Figure 4. Author productivity remains highly dispersed without the presence of a clearly dominant scholar, with Agustín Adúriz-Bravo identified as the most productive author contributing only three publications, while most other authors contributed one or two publications. This pattern indicates that philosophy of education research at the primary education level is characterized by a decentralized and collectively distributed authorship structure rather than being shaped by a small group of highly influential scholars. Such a configuration suggests that the field is still developing intellectually and has not yet formed strongly consolidated centers of expertise or dominant scholarly traditions.

Furthermore, the relatively low level of individual author productivity reflects the fragmented and multidisciplinary nature of the field, where contributions emerge from diverse

philosophical, pedagogical, and educational perspectives rather than from a unified theoretical orientation. This condition may indicate that philosophy of education research is still undergoing a process of intellectual expansion and thematic diversification, particularly as contemporary educational issues increasingly encourage interdisciplinary engagement. However, the absence of stronger scholarly concentration may also limit the formation of sustained theoretical continuity and intellectual leadership within the field. Consequently, although the distributed pattern of authorship reflects openness and diversity in knowledge production, it simultaneously highlights the need for stronger scholarly collaboration and more systematic conceptual consolidation to support the long-term maturation of philosophy of education research at the primary education level.

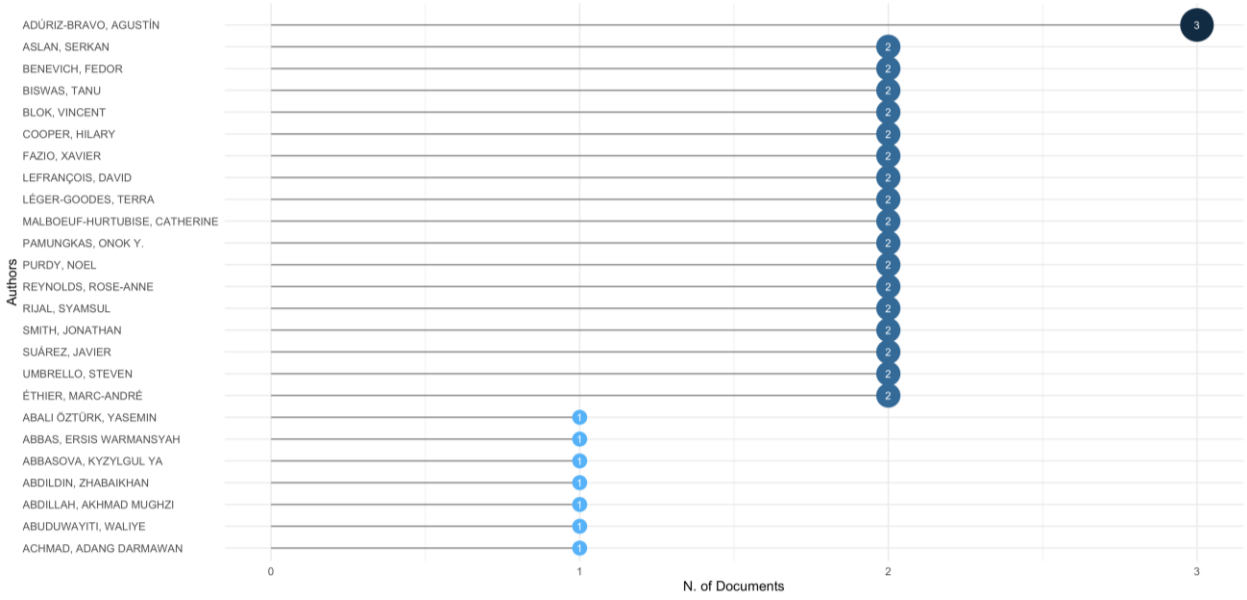

Figure 4. Most relevant authors

The structure of author productivity and distribution is closely aligned with the pattern of scientific impact presented in Figure 5. The global citation analysis reveals substantial disparities in scholarly influence, where a single publication by Kaushik & Walsh (2019) dominates the citation landscape with 545 citations, far exceeding all other documents within the dataset. Other influential publications occupy significantly lower citation positions, including Serholt et al. (2017) with 133 citations, and Tasantab (2019) with 35 citations. Although these studies demonstrate meaningful contributions to the field, their scientific influence remains considerably lower compared to the most highly cited publication. This uneven citation distribution indicates that the intellectual influence within philosophy of education research is strongly hierarchical and concentrated in a relatively small number of highly influential works.

The observed asymmetry further suggests that the development of the field is shaped not only by the expansion of publication output but also by the concentration of epistemic influence within specific publications that function as key intellectual references. Highly cited works tend

to provide broader conceptual or methodological relevance that extends beyond primary education contexts, thereby attracting greater interdisciplinary attention and citation impact. In contrast, the majority of publications contribute more modestly by enriching thematic diversity and supporting the broader scholarly discourse without becoming dominant intellectual anchors. Consequently, the citation structure of philosophy of education research reflects a developing field in which scientific influence remains unevenly distributed, highlighting both the emergence of influential foundational works and the continuing need for stronger theoretical consolidation across the research landscape.

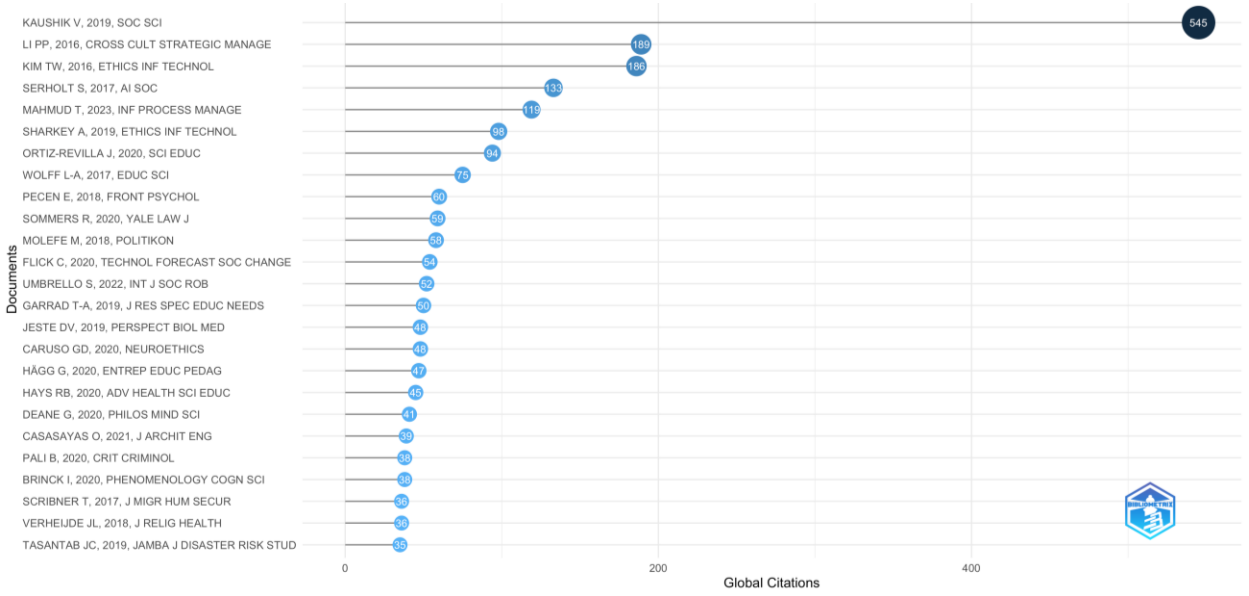

Figure 5. Most global cited documents

What conceptual structure and key themes shape philosophy of education research at the primary education level?

The word cloud analysis presented in Figure 6 demonstrates that the conceptual structure of philosophy of education research at the primary education level is dominated by themes with a strong epistemic and philosophical orientation. The terms philosophy and epistemology emerge as the most prominent concepts, followed by ethics and phenomenology, indicating that the field is fundamentally concerned with questions related to knowledge, morality, human experience, and the philosophical foundations of education. This pattern confirms that philosophy of education in primary education continues to be strongly rooted in classical philosophical inquiry while simultaneously engaging with broader educational and pedagogical concerns. The prominence of these concepts also reflects the continuing importance of reflective and theoretical discourse in shaping educational understanding and practice.

The relationship between philosophical reflection and educational practice is further illustrated through the emergence of themes such as education, philosophy for children, and curriculum, which indicate growing attention toward the practical implementation of philosophical approaches within elementary education. At the same time, the appearance of themes such as

sustainability and critical thinking demonstrates the increasing integration of contemporary educational issues into the philosophical discourse of primary education. In contrast, the continued presence of classical concepts such as ontology and metaphysics, alongside references to philosophers including Wittgenstein, Aristotle, and Kant, highlights the persistence of strong philosophical traditions within the field. Overall, this conceptual configuration represents a rich, multidimensional, and evolving intellectual landscape. However, the coexistence of diverse philosophical traditions and emerging contemporary themes also indicates that the field has not yet achieved sufficient conceptual coherence within a fully integrated theoretical framework, thereby reinforcing the fragmented nature of philosophy of education research at the primary education level.

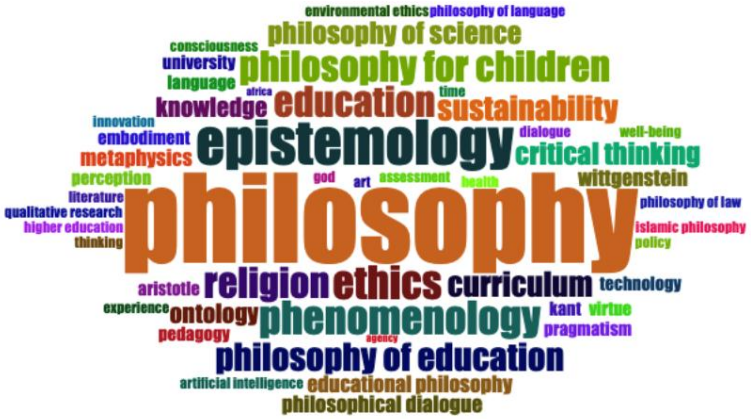

Figure 6. Word cloud

This conceptual structure is further reinforced by the co-occurrence network analysis presented in Figure 7, which illustrates the relationships and interconnections among themes across several major conceptual clusters. The dominant cluster is centered on the term human, which is closely associated with ethics, bioethics, empathy, and morality, indicating that philosophy of education research at the primary education level is strongly oriented toward ethical and humanistic dimensions. This pattern suggests that discussions concerning values, moral development, and human experience remain central to the philosophical foundations of primary education. The prominence of these interconnected themes also reflects the continuing concern for cultivating ethical awareness and reflective understanding within educational contexts.

Another major cluster emphasizes the educational and pedagogical dimensions through the interconnection of themes such as education, curriculum, organization, and management, highlighting the growing integration of philosophical discourse with educational practice and institutional contexts. In addition, the philosophical cluster demonstrates a methodological orientation through the relationship between philosophy and qualitative research, indicating that interpretive and reflective approaches continue to play an important role in examining educational phenomena. The emergence of themes such as religion further strengthens the value-oriented character of the field, while contemporary issues such as artificial intelligence and climate change

appear as peripheral themes that remain weakly connected to the dominant conceptual network. This configuration suggests that although philosophy of education research encompasses diverse and evolving themes, the field still exhibits a segmented conceptual structure with relatively limited integration across thematic areas. Consequently, the co-occurrence network analysis reinforces the diagnosis that philosophy of education research at the primary education level has not yet achieved strong conceptual coherence within a systematically integrated intellectual framework.

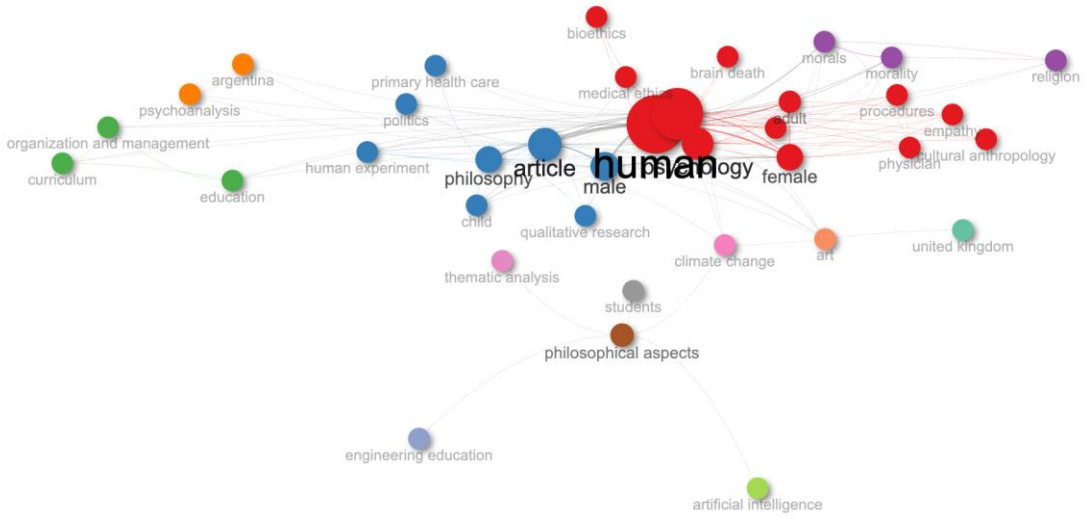

Figure 7. Co-occurrence network

Further insight into the conceptual organization of the field is provided by the thematic map analysis in Figure 8, which classifies research themes according to their levels of centrality and development. Motor themes such as phenomenology and philosophy of science occupy highly developed and strongly connected positions within the thematic structure, indicating their role as major driving forces in the advancement of philosophy of education research at the primary education level. These themes demonstrate both conceptual maturity and strong relevance to the broader intellectual network, suggesting that they function as important reference points in shaping the direction of contemporary philosophical and educational discourse.

At the same time, basic themes such as philosophy, epistemology, and education form the core conceptual foundation of the field due to their high centrality, although their thematic development remains relatively broad rather than deeply specialized. In contrast, niche themes demonstrate stronger internal development but remain relatively isolated from the broader conceptual network, indicating limited integration with the dominant discourse. Meanwhile, emerging or declining themes represent topics that are still unstable, marginal, or undergoing transitional development within the research landscape. Overall, this thematic configuration

confirms that philosophy of education research at the primary education level possesses a strong philosophical foundation but has not yet achieved fully systematic conceptual coherence. The coexistence of highly developed core themes alongside fragmented peripheral themes suggests that the field continues to evolve through thematic diversification rather than through fully integrated theoretical consolidation. Consequently, these findings reinforce the need for more comprehensive conceptual integration capable of connecting philosophical traditions, pedagogical concerns, and emerging contemporary issues within a more structured and coherent scholarly framework.

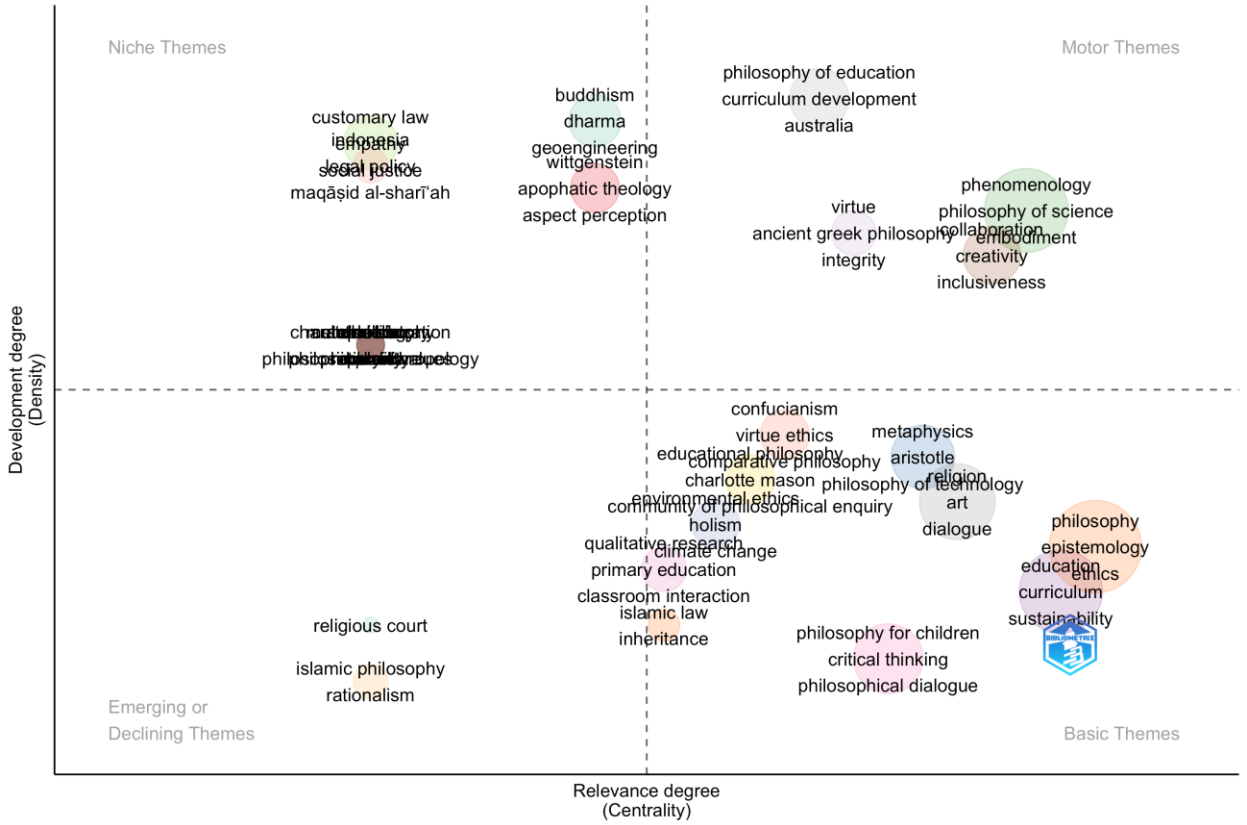

Figure 8. Thematic map

How do Thematic Evolution and Research Trends Develop in Philosophy of Education at The Primary Education Level?

The analysis of trend topics in Figure 9 illustrates the thematic evolution of philosophy of education research at the primary education level, demonstrating a gradual shift from classical philosophical foundations toward more contextual, applied, and contemporary educational orientations. During the initial phase (2018–2020), dominant themes such as ethics, curriculum, philosophy of science, metaphysics, and pragmatism reflected the strong theoretical and epistemic foundations of the field. This configuration indicates that early research development was primarily concerned with establishing philosophical perspectives related to knowledge, values, and educational meaning as the conceptual basis for understanding primary education. The dominance

of these classical themes further confirms that philosophical inquiry initially functioned as a foundational discourse emphasizing theoretical reflection and conceptual depth.

Entering the transitional phase (2021–2022), the thematic structure began to demonstrate a stronger integration between philosophical reflection and educational practice. Themes such as education, virtue, philosophy of education, critical thinking, and religion became increasingly prominent, indicating a growing orientation toward the practical implications of philosophical thought within teaching, learning, and value formation in elementary education. This thematic transition suggests that philosophy of education was increasingly positioned not only as a theoretical discipline but also as a reflective framework capable of responding to contemporary pedagogical and social challenges.

The acceleration phase during the period 2023–2025 is characterized by the increasing prominence of themes such as philosophy, epistemology, philosophy for children, sustainability, and ontology, alongside the recontextualization of classical philosophical thought represented by figures such as Wittgenstein and Aristotle within more applied educational contexts. This pattern demonstrates that the field is evolving toward a more adaptive and integrative orientation, where philosophical traditions are continuously reconstructed to address contemporary educational concerns, including sustainability, ethical reasoning, reflective learning, and critical inquiry. At the same time, themes such as knowledge and phenomenology remain consistently present across periods, confirming the stability of the epistemic dimension as a central pillar of the field. Overall, this thematic evolution reflects a progressive and dynamic development in which classical philosophical foundations are not abandoned but are continuously contextualized and integrated into contemporary primary education discourse and practice..

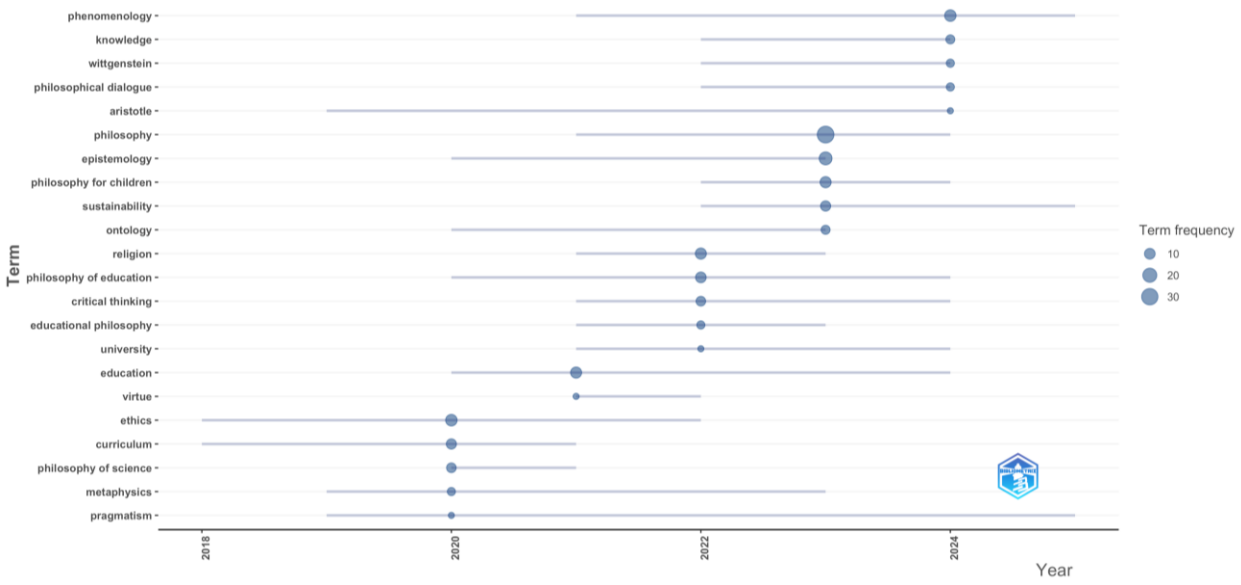

Figure 9. Trend topics

Overall, these findings indicate that the evolution of philosophy of education research at the primary education level is characterized by a progressive, adaptive, and increasingly

integrative trajectory in which classical philosophical foundations are not displaced but continuously reinterpreted within contemporary educational contexts. The thematic development of the field reflects a dynamic interaction between epistemic depth and pedagogical relevance, demonstrating the growing capacity of philosophy of education to respond to emerging educational challenges related to critical thinking, sustainability, ethical learning, and reflective pedagogy in elementary education. At the same time, the coexistence of stable foundational themes alongside emerging contemporary issues reveals that the field remains conceptually diverse yet not fully integrated. This condition reinforces the diagnosis that philosophy of education research at the primary education level is still undergoing a process of intellectual consolidation, requiring stronger conceptual integration and more systematic scholarly collaboration to establish a more coherent, mature, and theoretically grounded direction for future research and educational practice.

DISCUSSION

Rapid Growth but Not Yet Fully Scientifically Mature

The rapid growth of philosophy of education research at the primary education level over the past decade reflects the increasing recognition of philosophy as an important foundation for addressing contemporary educational challenges. The substantial increase in publication output indicates that philosophical reflection is no longer positioned merely as an abstract theoretical discourse but is increasingly understood as a relevant framework for supporting critical thinking, ethical awareness, reflective learning, and learner-centered educational practices in elementary education. This acceleration is closely related to the broader transformation of 21st-century education, which increasingly demands educational approaches capable of integrating cognitive, ethical, and contextual dimensions within the learning process. In this context, philosophy of education functions not only as a conceptual foundation but also as an interpretive framework that helps educators and researchers respond to complex social, moral, and pedagogical challenges in contemporary primary education.

However, despite this significant quantitative expansion, the development of philosophy of education research at the primary education level has not yet fully reflected the characteristics of a scientifically mature field. The relatively moderate citation impact and the limited level of international collaboration indicate that the global scholarly network and intellectual influence of the field remain insufficiently consolidated. This condition suggests that the expansion of scientific production has progressed more rapidly than the development of conceptual integration, theoretical continuity, and international research connectivity. As a result, the field demonstrates characteristics of a transitional phase in which thematic diversification and publication growth continue to expand without being fully accompanied by strong intellectual consolidation. The fragmented pattern of scholarly influence and the decentralized distribution of author productivity further reinforce the diagnosis that philosophy of education research remains structurally dispersed across diverse philosophical and educational orientations.

From a broader educational perspective, this condition also carries important implications for primary education practice and curriculum development. The growing interest in philosophy of education reflects increasing awareness of the importance of reflective, ethical, and critical

dimensions in elementary learning environments. Nevertheless, without stronger conceptual integration and sustained scholarly collaboration, the development of philosophical discourse risks remaining fragmented between theoretical reflection and practical educational implementation. Consequently, philosophy of education may struggle to establish a sufficiently coherent framework capable of systematically guiding curriculum orientation, teacher reflection, and value-based pedagogical practices in primary education. Therefore, strengthening publication quality, expanding cross-national collaboration, and developing more integrated research agendas are essential not only for advancing the scientific maturity of the field but also for ensuring that philosophy of education can contribute meaningfully to the transformation of contemporary elementary education..

Global Inequality in Scientific Production in Philosophy of Education Research

The uneven distribution of scientific production demonstrates that the development of philosophy of education research at the primary education level remains strongly influenced by disparities in national research capacity and academic infrastructure. The dominance of countries such as Indonesia, the United Kingdom, and the United States reflects the concentration of knowledge production within relatively established academic ecosystems characterized by stronger research traditions, institutional support, funding availability, and international publication networks. In particular, the leading position of Indonesia may be associated with the rapid expansion of higher education, national research publication policies, institutional accreditation systems, and increasing academic pressure to produce internationally indexed publications. This condition suggests that the growth of philosophy of education research is shaped not only by intellectual interest in the field but also by broader structural and policy-driven dynamics within national academic systems.

At the same time, the relatively limited contribution from many other countries indicates persistent inequalities in access to academic resources, publication opportunities, research funding, and participation in international scholarly collaboration. This imbalance reflects a broader phenomenon of global knowledge asymmetry, in which scientific influence and academic visibility tend to be concentrated in countries with stronger institutional and publication capacities. Consequently, the direction of scholarly discourse in philosophy of education research risks being disproportionately shaped by dominant academic centers, while diverse local educational realities and philosophical perspectives remain underrepresented within the global research landscape. Such conditions may limit the development of a more inclusive and contextually diverse understanding of philosophy of education, particularly in relation to the varied cultural, social, and pedagogical contexts of primary education worldwide.

From a diagnostic perspective, this concentration of scientific production also reflects the unequal distribution of epistemic authority within the field. Countries with stronger publication capacities increasingly function as centers of conceptual influence, while peripheral regions often participate more marginally in shaping theoretical and methodological directions. Without stronger international collaboration, more equitable research partnerships, and broader scholarly participation across regions, philosophy of education research at the primary education level risks

remaining geographically concentrated and epistemically imbalanced. Therefore, strengthening cross-national collaboration and expanding inclusive global research networks are essential not only for increasing publication diversity but also for fostering a more representative, context-sensitive, and globally integrated development of philosophy of education research.

Fragmentation of the Conceptual Structure in Philosophy of Education Research

Philosophy of education research at the primary education level demonstrates a strong and diverse conceptual foundation; however, this foundation has not yet been systematically integrated within a coherent theoretical framework. The dominance of themes such as epistemology, ethics, and phenomenology confirms that the field remains deeply rooted in classical philosophical inquiry concerning knowledge, morality, and human experience in education. At the same time, the increasing prominence of themes such as critical thinking, sustainability, and philosophy for children indicates a growing effort to connect philosophical reflection with contemporary educational demands and pedagogical practices in elementary education. This thematic expansion reflects the adaptive and multidisciplinary nature of the field, particularly as educational discourse increasingly emphasizes reflective learning, ethical reasoning, and context-responsive pedagogy.

Nevertheless, the relationships among these themes remain relatively fragmented across separate conceptual clusters, indicating that the multidimensional development of the field has not yet been accompanied by sufficient conceptual coherence. The co-occurrence network and thematic map analyses demonstrate that while several themes possess high centrality and function as major conceptual foundations, their integration with emerging and specialized themes remains limited. Core themes such as philosophy, epistemology, and education occupy central positions within the intellectual structure, yet they have not fully developed into a systematically integrated theoretical orientation capable of connecting philosophical traditions, pedagogical approaches, and contemporary educational challenges. Meanwhile, other themes continue to evolve in relatively isolated ways, reflecting thematic diversification without strong conceptual consolidation.

From a diagnostic perspective, this fragmented configuration suggests that philosophy of education research at the primary education level is still undergoing a transitional process toward intellectual consolidation. The coexistence of classical philosophical foundations and emerging contemporary themes demonstrates the dynamic evolution of the field, but it also reveals the absence of a sufficiently unified conceptual direction. Without stronger theoretical integration, philosophy of education risks remaining dispersed across multiple disconnected orientations, limiting its capacity to function as a coherent framework for guiding educational theory, curriculum development, and pedagogical practice in primary education. Therefore, the development of more integrative and interdisciplinary conceptual frameworks becomes increasingly important to strengthen conceptual coherence, connect fragmented thematic domains, and support the long-term maturation of philosophy of education research within contemporary elementary education discourse.

Evolution from Philosophical Foundations to Contextual Approaches in Philosophy of Education

Philosophy of education research at the primary education level has undergone a substantial shift from predominantly classical philosophical orientations toward more contextual, applied, and pedagogically oriented approaches. In the earlier phase of development, the dominance of themes such as metaphysics, philosophy of science, and pragmatism reflected the strong influence of foundational philosophical inquiry concerned with questions of knowledge, truth, meaning, and educational purpose. These themes indicate that the field initially emphasized theoretical reflection as the primary basis for understanding educational processes and philosophical dimensions of primary education. However, over time, the thematic orientation gradually expanded toward more practice-oriented concerns, including critical thinking, virtue, and education, reflecting a growing effort to integrate philosophical reflection into pedagogical contexts and classroom practice.

This thematic transformation suggests that philosophy of education is increasingly positioned not merely as an abstract theoretical discourse but as a reflective and operational framework capable of informing teaching, learning, and curriculum development in elementary education. The strengthening of contemporary themes such as sustainability, philosophy for children, and epistemology further demonstrates the adaptive capacity of the field in responding to emerging educational challenges and societal transformations. At the same time, the continued presence and recontextualization of classical philosophical figures such as Wittgenstein and Aristotle within more applied educational discussions confirm that philosophical traditions are not abandoned but continuously reconstructed to remain relevant within contemporary educational contexts (Biesta, 2015; Nussbaum, 2010). This pattern reflects a dynamic interaction between theoretical continuity and contextual adaptation, where philosophical depth and educational relevance increasingly intersect within the development of the field.

The consistency of themes such as knowledge and phenomenology across different periods further demonstrates the stability of the epistemic dimension as a central pillar of philosophy of education research. These enduring themes function as conceptual bridges connecting philosophical reflection with practical educational concerns, thereby maintaining the intellectual continuity of the field amid thematic diversification. However, from a pedagogical perspective, the increasing orientation toward contextual and applied approaches also raises important concerns regarding the potential dilution of philosophical rigor when theoretical foundations are translated into practical educational strategies without sufficient conceptual integration. In primary education contexts, this condition may lead to the adoption of reflective or critical pedagogical approaches that are pragmatically implemented but insufficiently grounded in coherent philosophical frameworks. Consequently, the evolution of philosophy of education research reflects both the adaptive strength and the conceptual challenges of the field, reinforcing the need for stronger integration between philosophical traditions, pedagogical implementation, and contemporary educational discourse. A comprehensive synthesis of these dynamics is presented in Figure 10, which integrates the dimensions of scientific growth, global inequality, conceptual fragmentation, and thematic evolution within a unified analytical framework.

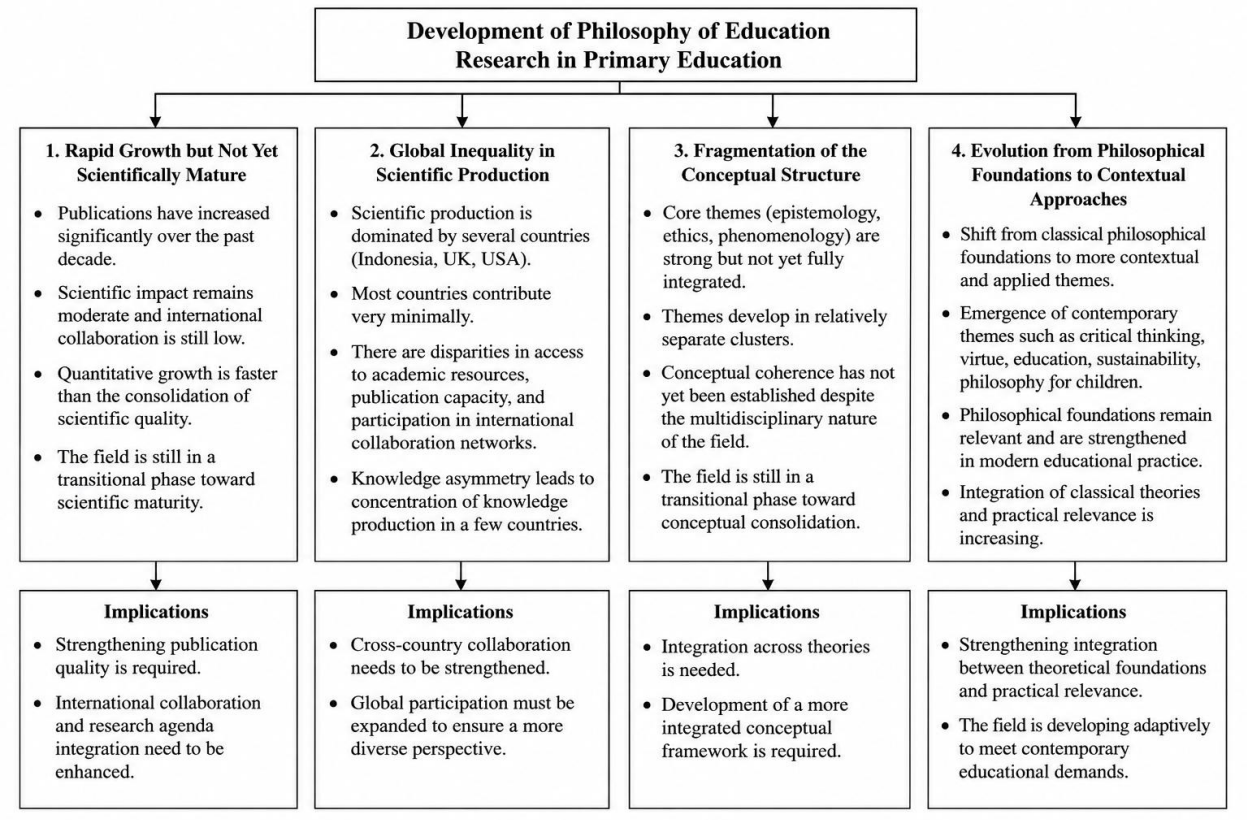

Figure 10. Synthesis of the development of philosophy of education research at the primary education level

Theoretical and Practical Implications

The findings of this study provide important theoretical implications for the development of philosophy of education research at the primary education level. The identified conceptual fragmentation indicates that the field has not yet achieved a sufficiently integrated theoretical orientation capable of systematically connecting philosophical traditions, pedagogical practices, and contemporary educational challenges within a coherent conceptual framework. This condition reflects a broader epistemic challenge in contemporary primary education, where the expansion of contextual and applied educational approaches is not always accompanied by strong philosophical integration. At the same time, the thematic evolution from classical philosophical foundations toward more contextual orientations demonstrates the adaptive and dynamic nature of the field, particularly in responding to contemporary concerns such as critical thinking, sustainability, ethical learning, and philosophy for children. These findings highlight the urgency of developing more integrative and interdisciplinary research agendas capable of strengthening conceptual coherence while maintaining the relevance of philosophical reflection in contemporary educational discourse.

Practically, the findings demonstrate that philosophy of education possesses substantial potential to contribute directly to the transformation of elementary education. The growing

emphasis on reflective thinking, dialogical learning, sustainability, and ethical reasoning indicates that philosophy of education can function not merely as a theoretical discourse but as a foundational pedagogical framework for curriculum development, teacher reflection, and value-oriented instructional practices. In particular, the integration of contextual philosophical approaches within classroom learning may strengthen students' critical reasoning capacities, reflective awareness, and ethical sensitivity from an early age. Furthermore, the low level of international collaboration and the unequal distribution of scientific production underline the importance of expanding global scholarly networks and strengthening cross-national academic capacity to support more inclusive and representative knowledge production. Therefore, philosophy of education research plays a strategic role not only in advancing theoretical discourse but also in fostering more reflective, inclusive, philosophically grounded, and sustainable practices in primary education.

CONCLUSION

This study confirms that philosophy of education research at the primary education level has experienced rapid and sustained growth over the past decade, reflecting the increasing recognition of philosophy as an essential foundation for responding to contemporary educational challenges. However, despite this quantitative expansion, the field remains in a transitional phase toward scientific and conceptual maturity. The findings reveal persistent structural challenges, including global disparities in scientific production, limited international collaboration, and fragmentation across conceptual and thematic structures. The thematic evolution from classical philosophical foundations toward more contextual and applied approaches demonstrates the adaptive development of the field, particularly in relation to critical thinking, sustainability, and philosophy for children. Nevertheless, this evolution has not yet been accompanied by sufficient conceptual integration capable of systematically connecting philosophical traditions, pedagogical practices, and contemporary educational demands within a coherent theoretical framework.

From a diagnostic perspective, the identified fragmentation reflects a broader challenge within contemporary primary education, where the increasing emphasis on practical and contextual educational agendas risks weakening the philosophical coherence underlying curriculum and instructional development. Without stronger conceptual integration, philosophy of education may remain fragmented between theoretical discourse and pedagogical implementation, thereby limiting its transformative potential in shaping reflective, ethical, and critically oriented learning environments in elementary schools. Therefore, this study contributes not only by mapping the intellectual landscape of philosophy of education research but also by diagnosing the structural and conceptual conditions shaping its evolution. The study highlights the urgency of strengthening international scholarly collaboration, developing more integrated research agendas, and reconnecting philosophical reflection with educational practice in primary education. Such efforts are essential for advancing philosophy of education toward a more mature, inclusive, theoretically coherent, and pedagogically transformative field capable of meaningfully supporting the sustainable improvement of primary education quality.

The authors declare that there is no conflict of interest in this work.
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