

KNOWLEDGE MAPPING OF DECOLONIZING EDUCATION IN SOUTHEAST ASIA: A BIBLIOMETRIC ANALYSIS OF INDIGENOUS KNOWLEDGE AND CULTURE-BASED PEDAGOGY

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Abstract: This study maps the knowledge structure and research development of decolonizing education in Southeast Asia through a bibliometric analysis of 1,258 Scopus-indexed journal articles published from 1993 to 2025. It examines publication trends, major knowledge producers, scholarly collaboration, conceptual relationships, and thematic evolution within the field. Bibliographic data were analyzed using Bibliometrix/Biblioshiny and VOSviewer, employing performance analysis, co-authorship analysis, keyword co-occurrence analysis, collaboration network analysis, and thematic mapping. Qualitative content analysis was also used to support the interpretation of identified thematic clusters. The findings show sustained growth in scholarly production, particularly after 2015, reflecting increasing research attention to indigenous knowledge, culture-based pedagogy, sustainability, and related educational concerns. The knowledge-production landscape is concentrated among several Southeast Asian countries, while collaboration networks remain comparatively fragmented. Keyword co-occurrence analysis identifies indigenous knowledge, traditional knowledge, local wisdom, sustainability, and climate change as central concepts in the research field. Thematic mapping further indicates that indigenous knowledge, sustainability, and climate change occupy strategically important positions, while traditional knowledge and local wisdom remain foundational themes. Emerging themes, including multicultural education, indicate an expanding research agenda. Overall, the findings demonstrate that bibliometric knowledge mapping can provide a systematic, data-driven view of the structure and evolution of decolonizing education research. The mapped knowledge landscape highlights opportunities for stronger regional collaboration, interdisciplinary research, and more inclusive knowledge production concerning indigenous knowledge and culture-based pedagogy.

Keywords: Bibliometric analysis; knowledge mapping; decolonizing education; indigenous knowledge; culture-based pedagogy; Southeast Asia



1. Introduction

Education has long served as a site where knowledge, culture, and power intersect. Across many postcolonial societies, formal education systems have historically privileged Eurocentric epistemologies while marginalizing indigenous knowledge systems, local languages, and community-based ways of knowing (Fanon, 1963; Mignolo, 2011; Smith, 2021). These colonial legacies continue to shape curricula, pedagogical practices, and knowledge production, creating persistent inequalities in whose knowledge is recognized, legitimized, and transmitted. Consequently, the movement toward decolonizing education has gained increasing scholarly attention as an effort to challenge colonial knowledge hierarchies, promote epistemic justice, and reposition indigenous epistemologies as legitimate foundations of teaching, learning, and research (de Sousa Santos, 2018; Mignolo, 2011; Smith, 2021).

Within this movement, indigenous knowledge and culture-based pedagogy have emerged as important approaches for reconnecting education with local histories, languages, identities, and community practices. Rather than treating indigenous knowledge as supplementary to dominant curricula, decolonizing education advocates its recognition as a valid and dynamic knowledge system capable of informing educational practice, environmental stewardship, and sustainable development (Smith, 2021). Culture-based pedagogy similarly emphasizes learning that is grounded in learners' cultural experiences and community contexts, fostering educational practices that are socially relevant, culturally sustaining, and responsive to local realities.

These perspectives are particularly significant in Southeast Asia, a region characterized by extensive cultural diversity, linguistic plurality, and numerous indigenous communities. Countries such as Indonesia, Malaysia, Thailand, and the Philippines have increasingly incorporated indigenous knowledge, local wisdom, and culture-based pedagogies into educational policies and practices to strengthen cultural identity, community participation, and sustainable development. The adoption of global frameworks such as the Sustainable Development Goals (SDGs)—particularly SDG 4 (Quality Education)—has further encouraged educational systems to promote inclusive, equitable, and culturally responsive learning environments that recognize diverse knowledge traditions (United Nations, 2015). Consequently, scholarly interest in decolonizing education has expanded considerably across the region.

Despite this growing body of scholarship, current research remains fragmented. Existing reviews primarily examine indigenous knowledge integration, culturally responsive pedagogy, or education for sustainable development within specific national or disciplinary contexts, while bibliometric investigations generally position these topics within broader fields such as environmental education or sustainability studies rather than examining decolonizing education as an intellectual field in its own right (Aria & Cuccurullo, 2017; Donthu et al., 2021). Consequently, little is known about how knowledge on decolonizing education has evolved across Southeast Asia, who produces this knowledge, how scholarly collaborations are organized, and which themes have shaped the intellectual development of the field.

Addressing these questions is important from the perspective of the sociology of knowledge, which views scientific knowledge as socially produced through networks of scholars, institutions, and power relations rather than as a neutral accumulation of information (Berger & Luckmann, 1966). Bibliometric analysis provides a systematic approach for examining these knowledge production processes by identifying influential contributors, collaboration patterns, conceptual structures, and emerging research trajectories (Aria & Cuccurullo, 2017; Donthu et al., 2021). Applying this approach to decolonizing education offers insights not only into publication trends but also into the regional dynamics through which indigenous epistemologies are increasingly recognized within academic discourse.

Accordingly, this study conducts a bibliometric analysis of 1,258 Scopus-indexed journal articles published between 1993 and 2025 to examine the intellectual development of research on decolonizing education in Southeast Asia. Specifically, the study addresses the following research questions:

RQ1. How has scholarly production on decolonizing education in Southeast Asia evolved between 1993 and 2025?

RQ2. Who are the principal contributors—including authors, institutions, countries, and journals—to knowledge production in this field?

RQ3. Which concepts, themes, and research topics dominate the literature on decolonizing education?

RQ4. What intellectual and collaborative structures characterize research on decolonizing education in Southeast Asia?

RQ5. What research gaps and future directions emerge from the existing body of scholarship?

By mapping the evolution, knowledge networks, and conceptual structure of decolonizing education research, this study contributes to the sociology of education and the sociology of knowledge by demonstrating how indigenous epistemologies and culture-based pedagogies are reshaping scholarly discourse in Southeast Asia. It further provides an evidence-based foundation for strengthening regional collaboration, advancing epistemic justice, and informing future research on decolonizing educational systems.

2. Methodology

2.1 Research Design

This study employed a bibliometric research design to examine the evolution, intellectual structure, and knowledge production of scholarship on decolonizing education in Southeast Asia. Bibliometric analysis enables the systematic evaluation of scientific literature by identifying publication trends, influential contributors, collaboration networks, and conceptual structures within a research field (Aria & Cuccurullo, 2017; Donthu et al., 2021). Given the interdisciplinary nature of decolonizing education, this approach provides a robust means of examining how indigenous knowledge, culture-based pedagogy, and related concepts have developed as an emerging field of scholarly inquiry.

2.2 Data Source and Search Strategy

The bibliographic dataset was retrieved exclusively from the Scopus database because of its comprehensive coverage of high-quality peer-reviewed literature, standardized indexing system, and compatibility with bibliometric software (Pranckutė, 2021). Scopus has been widely recommended as a reliable source for bibliometric studies due to its extensive metadata and broad disciplinary coverage.

The literature search was conducted on 15 January 2026 using the TITLE-ABS-KEY (Title, Abstract, and Author Keywords) search fields. The search strategy was designed to capture the broad intellectual domain of decolonizing education by combining terms related to indigenous knowledge, culture-based pedagogy, and decolonial educational practices. The complete Boolean search string is presented in Appendix A.

Only English-language journal articles published between 1993 and 2025 were included. English-language publications were selected to ensure consistency in bibliometric analysis and because English remains the dominant language of international scholarly communication indexed in Scopus (Pranckutė, 2021). Conference papers, books, book chapters, review articles, editorials, notes, letters, and short surveys were excluded to maintain a homogeneous dataset consisting solely of original research articles.

The year 1993 was selected as the starting point because it represents the earliest Scopus-indexed publication retrieved using the search strategy, thereby capturing the complete development of the field during the study period.

The complete search protocol is summarized in Table 1.

Table 1. Search Protocol for Bibliometric Data Collection

Parameter	Description
Database	Scopus (Elsevier)

Search Date	15 January 2026
Search Fields	TITLE-ABS-KEY
Search Strategy	Boolean search combining terms related to decolonizing education, indigenous knowledge, and culture-based pedagogy (Appendix A)
Publication Period	1993–2025
Document Type	Journal articles
Language	English
Excluded Documents	Conference papers, reviews, books, book chapters, editorials, notes, letters, short surveys, and non-English publications
Duplicate Identification	DOI, article title, author names, and publication metadata
Export Format	CSV
Bibliometric Software	Bibliometrix/Biblioshiny (R) and VOSviewer version 1.6.20
Final Dataset	1,258 Scopus-indexed journal articles

2.3 Study Selection

To enhance transparency and reproducibility, the study selection process followed the PRISMA 2020 reporting framework (Page et al., 2021). Bibliographic records retrieved from Scopus were exported in comma-separated values (.csv) format and screened according to predefined inclusion and exclusion criteria.

The selection process consisted of four stages:

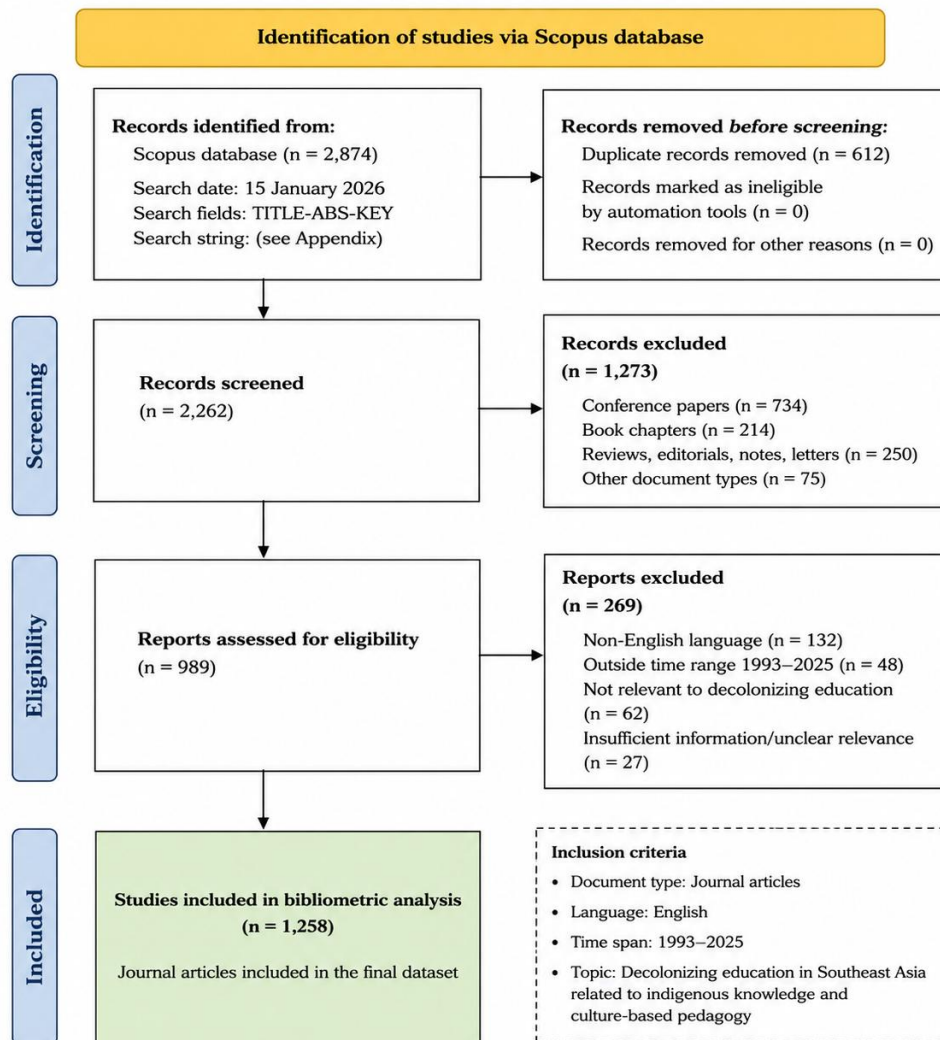
1. Identification of records retrieved from the Scopus database;
2. Screening through the removal of duplicate records and ineligible document types;
3. Eligibility assessment based on publication year, language, document type, and topical relevance to decolonizing education; and
4. Inclusion of studies meeting all eligibility criteria for bibliometric analysis.

Duplicate records were identified using Digital Object Identifiers (DOIs), article titles, author names, and publication metadata. Records that did not satisfy the inclusion criteria were removed before analysis. Following the screening process, 1,258 journal articles constituted the final dataset for bibliometric analysis.

Figure 1 illustrates the PRISMA 2020 flow diagram summarizing the identification, screening, eligibility assessment, and inclusion of studies.

Figure 1. PRISMA 2020 flow diagram of the study selection process.

PRISMA 2020 FLOW DIAGRAM



Note. This flow diagram follows the PRISMA 2020 reporting framework (Page et al., 2021).

2.4. Data Cleaning and Standardization

Prior to analysis, the bibliographic dataset underwent systematic cleaning to improve data quality and ensure consistency. Author names, institutional affiliations, source titles, and author keywords were examined for inconsistencies.

Keyword standardization was performed using a manually developed synonym file (.txt) to merge conceptually equivalent terms, including decolonizing education, decolonial education, culture-based education, indigenous knowledge, local wisdom, traditional knowledge, ethnopedagogy, culture-based pedagogy, and related concepts. Variations in spelling, abbreviations, singular and plural forms, and synonymous expressions were harmonized to improve the reliability of keyword co-occurrence and thematic analyses.

2.5 Bibliometric Analysis

The bibliometric analysis combined performance analysis and science mapping using the Bibliometrix package implemented through Biblioshiny in R (Aria & Cuccurullo, 2017) and VOSviewer version 1.6.20 (van Eck & Waltman, 2010).

Performance analysis evaluated:

1. annual scientific production;
2. citation performance;
3. influential authors;
4. productive institutions;
5. leading journals; and
6. country contributions.

Science mapping techniques included:

1. co-authorship analysis;
2. keyword co-occurrence analysis;
3. collaboration network analysis;
4. thematic mapping; and
5. thematic evolution analysis.

Keyword co-occurrence networks were generated using standardized author keywords to identify dominant research concepts and their relationships. Thematic maps classified research topics into motor, basic, niche, and emerging or declining themes based on centrality and density measures (Aria & Cuccurullo, 2017). Network visualizations employed the association-strength normalization algorithm implemented in VOSviewer (van Eck & Waltman, 2010).

To complement the quantitative bibliometric indicators, qualitative content analysis was undertaken to interpret the thematic clusters and relate them to broader discussions on indigenous epistemologies, decolonizing education, culture-based pedagogy, and epistemic justice.

2.6 Methodological Limitations

Several limitations should be acknowledged. First, the analysis was restricted to the Scopus database and therefore may not capture relevant publications indexed in other databases. Second, only English-language journal articles were included, potentially excluding valuable scholarship published in local Southeast Asian languages. Finally, bibliometric analysis identifies patterns of scientific production, collaboration, and conceptual development but does not assess the methodological quality or substantive findings of individual studies. These limitations should be considered when interpreting the results.

3. Results

3.1 Volume and Growth Trajectory of Knowledge Production

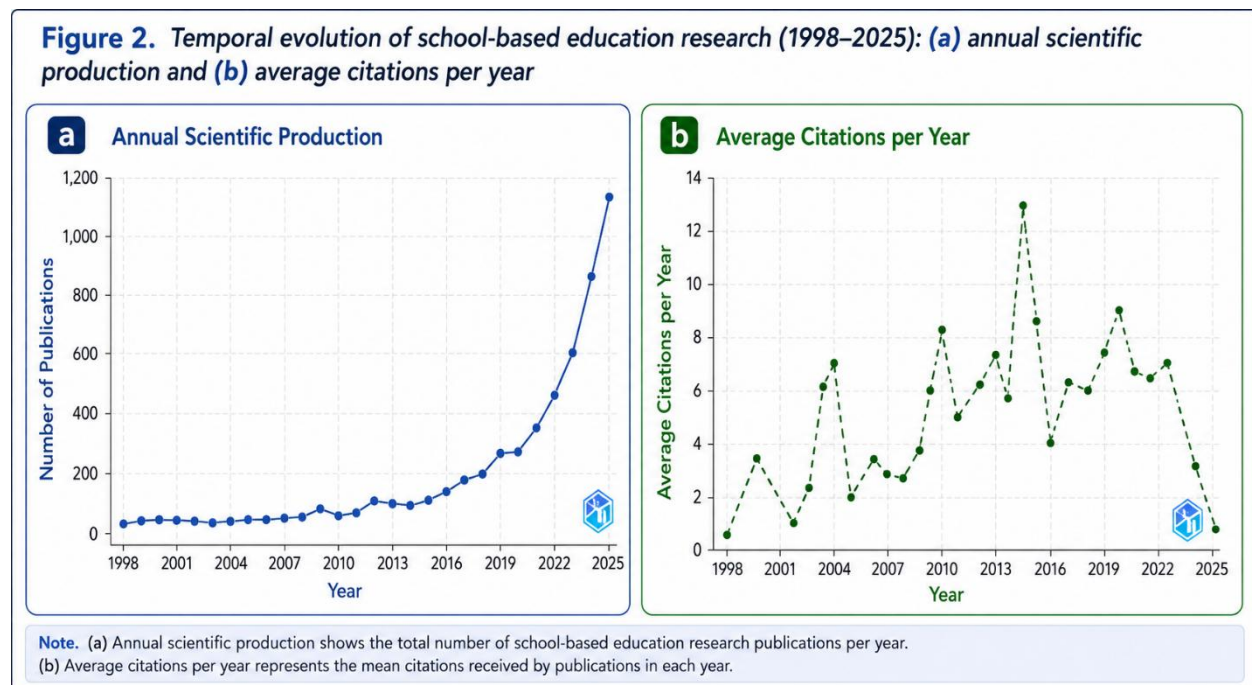
The bibliometric analysis reveals a substantial expansion in scholarly production on decolonizing education, reflecting the increasing recognition of indigenous knowledge systems and culture-based pedagogy within educational research. Based on the 1,258 Scopus-indexed journal articles published between 1993 and 2025, the field has evolved from a relatively small body of scholarship into an increasingly interdisciplinary and internationally visible area of inquiry. The annual publication growth rate of 13.38% demonstrates sustained scholarly interest in understanding how education can challenge colonial knowledge hierarchies and promote more culturally inclusive learning systems (Aria & Cuccurullo, 2017; Donthu et al., 2021).

During the early developmental period (1993–2010), publication output remained relatively limited, reflecting the nascent stage of scholarly engagement with indigenous knowledge and culture-based pedagogy. Much of the

literature during this period focused on documenting traditional knowledge systems, local cultural practices, and community-based educational experiences. Rather than explicitly framing these discussions within decolonial theory, early scholarship primarily emphasized cultural preservation and educational relevance within localized contexts.

From 2010 onward, publication output increased steadily, followed by a pronounced acceleration after 2015 (Figure 2). This growth coincides with expanding international discussions on curriculum decolonization, indigenous rights, culturally responsive education, and educational inclusion. The increasing visibility of indigenous epistemologies in academic discourse is also consistent with broader global initiatives promoting sustainable development, cultural diversity, and equitable education, particularly the implementation of Sustainable Development Goal 4 (Quality Education) (United Nations, 2015). While these global agendas may have contributed to greater scholarly attention, the observed growth more broadly suggests an increasing recognition that educational systems should value diverse knowledge traditions alongside conventional academic knowledge.

Figure 2 Annual scientific production on decolonizing education in Southeast Asia (1993–2025)



The rapid increase in publications between 2018 and 2025 further suggests that decolonizing education has become an important area of interdisciplinary inquiry extending beyond education into environmental studies, anthropology, indigenous studies, sociology, and sustainability science. From the perspective of the sociology of knowledge, this trajectory reflects not merely the expansion of publication output but also a transformation in the production and legitimacy of knowledge itself (Berger & Luckmann, 1966). As indigenous epistemologies increasingly enter mainstream scholarly discourse, research on decolonizing education illustrates how academic communities are gradually challenging historically dominant Eurocentric paradigms while legitimizing culturally grounded and community-based forms of knowledge (de Sousa Santos, 2018; Mignolo, 2011).

The growth trajectory also suggests that the field remains in an active phase of intellectual development rather than reaching conceptual maturity. The relatively recent average document age (5.24 years) indicates that much of the literature has been published within the last decade, highlighting the contemporary relevance of decolonizing education. Furthermore, contributions from 4,162 authors across 565 journals demonstrate that the field has expanded beyond a small specialist community into a broad interdisciplinary research network. Nevertheless, the international collaboration rate (30.68%) indicates that opportunities remain for stronger cross-national partnerships capable of facilitating more diverse perspectives and reducing regional disparities in knowledge production.

Table 2. Summary of Scientific Production Indicators

Indicator	Value
Total Documents	1,258
Publication Period	1993–2025
Annual Growth Rate	13.38%
Average Citations per Document	9.785
Average Document Age	5.24 years
Total Authors	4,162
Sources (Journals)	565
International Collaboration	30.68%

As shown in Table 2, the bibliometric indicators collectively portray a rapidly expanding yet evolving field of scholarship. The substantial number of contributing authors and publication outlets reflects the interdisciplinary character of decolonizing education, while the moderate citation rate suggests growing scholarly influence across multiple disciplines. Although international collaboration remains below one-third of total publications, this pattern may also reflect the localized nature of indigenous knowledge research, which is frequently grounded in specific cultural, linguistic, and community contexts. At the same time, increasing international collaboration offers opportunities to strengthen comparative scholarship, promote epistemic exchange, and advance more inclusive forms of global knowledge production. These findings position decolonizing education as an emerging intellectual movement characterized not only by increasing publication output but also by an ongoing transformation in the ways knowledge is produced, shared, and legitimized within Southeast Asia.

3.2 Countries, Journals, Authors, and Key Knowledge Producers

The distribution of scholarly production demonstrates that knowledge on decolonizing education is overwhelmingly produced within Southeast Asia, with Indonesia, Malaysia, Thailand, and the Philippines emerging as the principal contributors. Rather than reflecting a simple concentration of research activity, this pattern illustrates the close relationship between regional educational priorities, indigenous knowledge systems, and the historical experiences of postcolonial societies. Countries with extensive indigenous populations and strong commitments to preserving cultural heritage have become central sites for generating scholarship that challenges Eurocentric educational paradigms and promotes locally grounded knowledge systems (Berger & Luckmann, 1966; Mignolo, 2011).

Among all countries, Indonesia demonstrates the highest levels of both publication output and citation impact (Table 3). Indonesia's prominence may be understood within its historical and educational context. As one of the world's most culturally diverse nations, with more than 1,300 ethnic groups and hundreds of local languages, Indonesia has long recognized the educational value of *kearifan lokal* (local wisdom) and indigenous knowledge within curriculum development. National educational reforms emphasizing character education, local content curricula (*muatan lokal*), and culturally responsive learning have created favorable conditions for sustained research on indigenous and culture-based pedagogies. Consequently, Indonesian scholars have become leading contributors to the intellectual development of decolonizing education in Southeast Asia.

Malaysia and Thailand likewise demonstrate substantial research productivity, reflecting sustained governmental and institutional support for culturally responsive education and indigenous community engagement. Malaysia's multicultural educational context has encouraged scholarship examining the relationship between cultural diversity, identity, and educational inclusion, while Thailand has increasingly emphasized indigenous and community-based learning, particularly in northern regions where ethnic minority communities have played an important role in educational innovation. The Philippines, although producing fewer publications than Indonesia, Malaysia, and

Thailand, exhibits a steady upward trajectory that may reflect increasing recognition of Indigenous Peoples' education following policy initiatives supporting culturally appropriate and community-based educational programs.

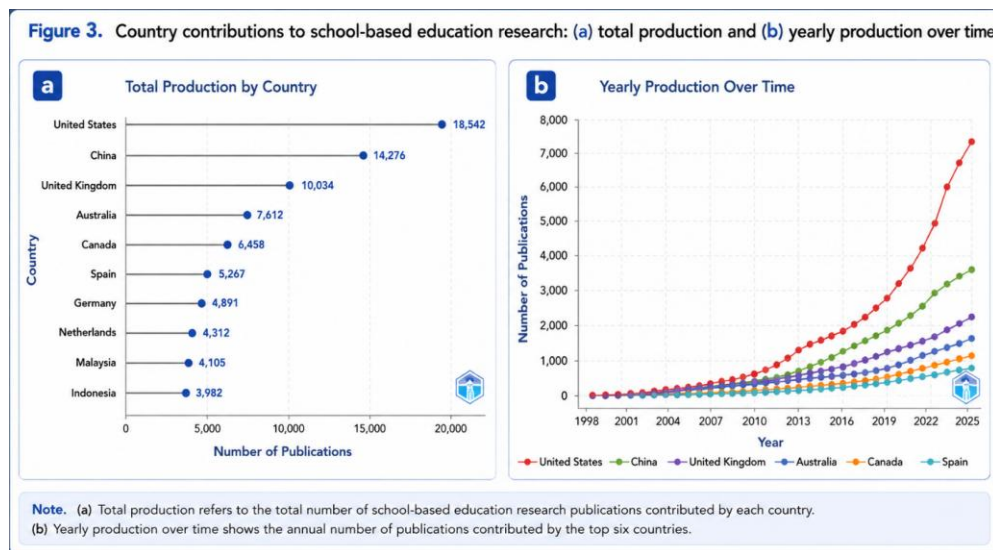
Table 3. Top Contributing Countries in Decolonizing Education Research

Country	No. of Publications	Total Citations	Average Citations per Article
Indonesia	1,314	2,736	2.08
Malaysia	315	993	3.15
Thailand	312	799	2.56
Philippines	195	570	2.92
Singapore	60	577	9.62

As shown in Table 3, Indonesia dominates both publication output and total citations, highlighting its central role in shaping scholarly discourse on decolonizing education. Singapore, although producing comparatively fewer publications, records the highest average citations per article, suggesting that its contributions achieve broader international visibility. This distinction illustrates that research influence is not determined solely by publication volume but also by the international reach and scholarly impact of individual studies. Similar observations have been reported in bibliometric research, where citation influence frequently differs from publication productivity (Donthu et al., 2021).

The temporal distribution of publications further demonstrates that research activity across Southeast Asia has accelerated markedly since 2015 (Figure 3). Indonesia exhibits the most rapid growth, followed by Malaysia and Thailand, while the Philippines shows consistent but more gradual expansion. This regional growth suggests increasing institutional investment in research addressing indigenous knowledge, culturally responsive pedagogy, and curriculum reform. Rather than representing isolated national developments, these trends collectively indicate the emergence of Southeast Asia as a regional center for scholarship on decolonizing education.

Figure 3. Annual scientific production by leading countries (1993–2025)

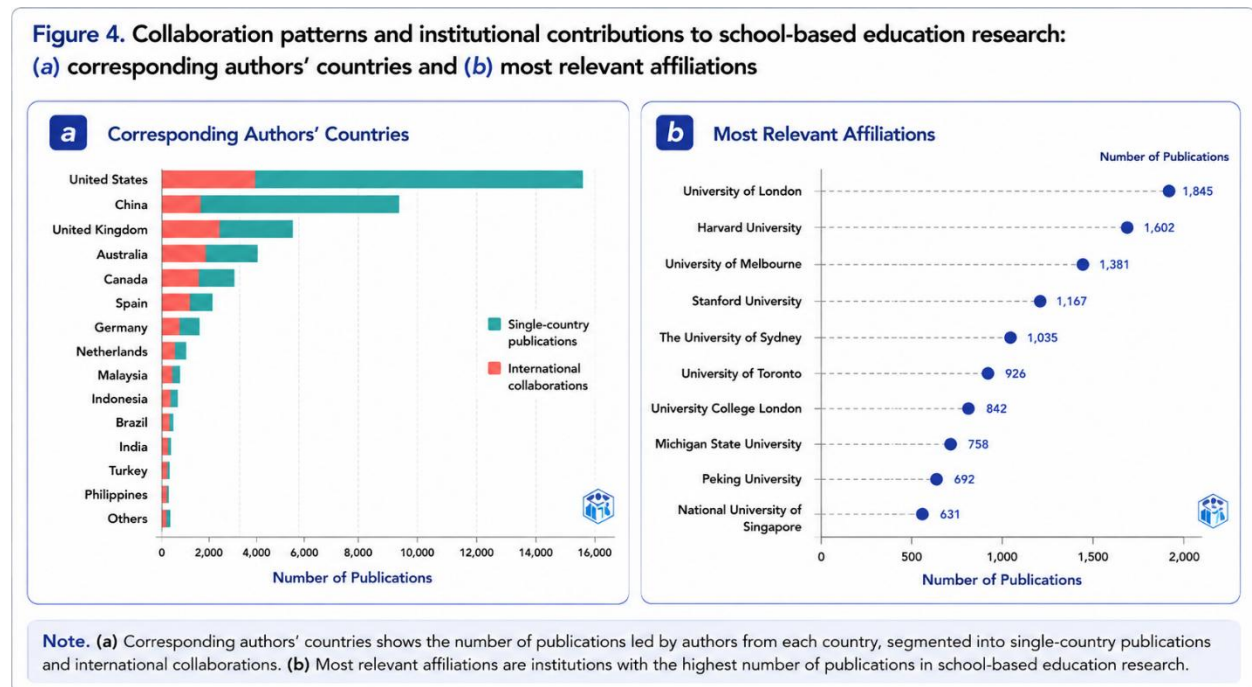


The analysis of corresponding authors' countries provides additional insights into patterns of international collaboration (Figure 4). Although Indonesia, Malaysia, Thailand, and the Philippines produce the majority of publications, most are classified as Single Country Publications (SCP), indicating that research remains largely nationally organized. Conversely, countries such as the United States, the United Kingdom, and Australia contribute

fewer publications but exhibit higher proportions of Multiple Country Publications (MCP), reflecting stronger participation in international research collaborations.

From the perspective of the sociology of knowledge, this pattern reveals important inequalities in global knowledge production. While Southeast Asian scholars generate much of the empirical and contextual knowledge on indigenous education, international collaboration remains uneven, potentially reflecting disparities in research funding, institutional capacity, language, and access to global academic networks (de Sousa Santos, 2018). The predominance of single-country publications also suggests that many investigations remain deeply embedded within local cultural contexts, an understandable characteristic of research focusing on indigenous communities and culturally specific educational practices.

Figure 4. Corresponding authors' countries showing Single Country Publications (SCP) and Multiple Country Publications (MCP).



At the institutional level, the leading universities are concentrated within the same countries that dominate national research productivity (Table 4). Chiang Mai University, Universitas Negeri Semarang, Universiti Kebangsaan Malaysia, Universitas Samudra, and the University of Malaya emerge as major centers of knowledge production. These institutions have established research programs emphasizing indigenous knowledge, environmental sustainability, teacher education, and community engagement, positioning them as regional hubs for scholarship on decolonizing education.

Table 4. Most Relevant Institutional Affiliations

Institution	Articles
Chiang Mai University	31
Universitas Negeri Semarang	30
Universiti Kebangsaan Malaysia	23
Universitas Samudra	22
University of Malaya	22

The analysis of publication sources reveals that the literature is dispersed across 565 journals, indicating that decolonizing education has not developed within a single disciplinary domain but instead draws upon multiple fields of inquiry. This dispersion reflects the interdisciplinary nature of the field, where educational research intersects with indigenous studies, environmental sciences, sustainability, anthropology, and sociology. While such diversity broadens theoretical and methodological perspectives, it also suggests that the field remains intellectually decentralized, with no single publication outlet serving as its primary platform.

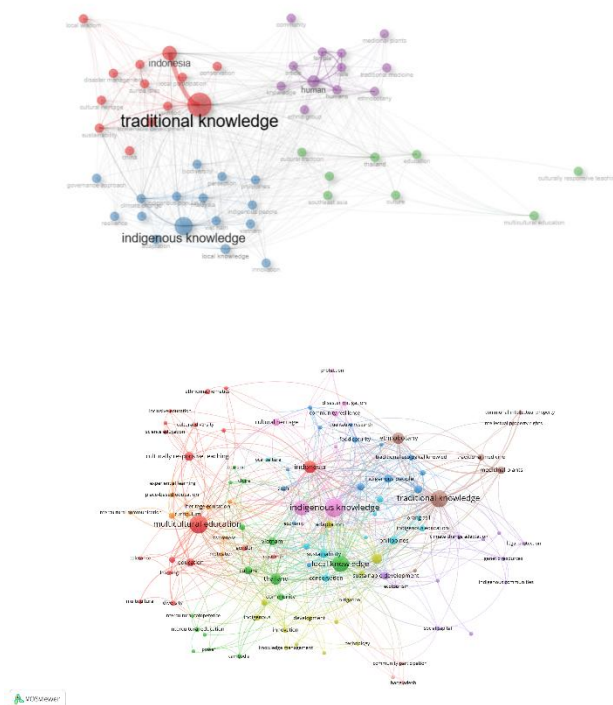
The author collaboration network likewise demonstrates a fragmented yet active research community. Distinct clusters are organized around leading scholars such as Suwardi A.B., Navia Z.I., Syamsuardi, Setyawan A.D., and Saensouk S., who function as central nodes within relatively independent research groups. Collaboration is generally strong within individual clusters but limited across clusters, indicating that research partnerships are largely shaped by institutional, national, and regional affiliations. This decentralized structure reflects the localized nature of research on indigenous knowledge, where scholars often work closely with specific communities, educational institutions, and cultural contexts.

From the perspective of the Sociology of Knowledge, these collaboration patterns demonstrate that scientific knowledge is socially situated and institutionally constructed rather than produced independently of social contexts (Berger & Luckmann, 1966). Similarly, Bourdieu's (1988) concept of the scientific field suggests that scholarly collaboration is influenced by institutional position, academic capital, and access to research networks. Consequently, the observed fragmentation should not be interpreted as a weakness of the field but rather as evidence that decolonizing education research remains deeply embedded within local cultural and institutional environments.

At the same time, the limited connections among research clusters may reflect broader inequalities within global knowledge production. Variations in research funding, academic mobility, institutional capacity, language, and publication access continue to shape opportunities for international collaboration. Such disparities are consistent with decolonial scholarship, which argues that colonial legacies continue to influence whose knowledge is internationally recognized and whose epistemologies remain marginalized within global academic systems (de Sousa Santos, 2018; Mignolo, 2011). Strengthening cross-national and interdisciplinary collaboration may therefore contribute to greater epistemic diversity while enhancing the global visibility of Southeast Asian scholarship.

Conceptual Structure Through Keyword Co-occurrence

Beyond the social organization of scholarship, the keyword co-occurrence network provides insight into the conceptual organization of decolonizing education research. Whereas collaboration networks illustrate relationships among researchers, keyword co-occurrence analysis reveals how research concepts are interconnected and collectively define the intellectual landscape of the field (Donthu et al., 2021). Figure 6 presents the Keyword co-occurrence network of decolonizing education research.



The keyword co-occurrence network reveals that indigenous knowledge, traditional knowledge, local wisdom, sustainability, and climate change constitute the principal conceptual foundations of decolonizing education research. Their strong interconnections indicate that contemporary scholarship increasingly positions educational decolonization not merely as curriculum reform but as a broader process of recognizing indigenous epistemologies as legitimate sources of educational, cultural, and environmental knowledge.

Among these concepts, indigenous knowledge emerges as the most prominent and interconnected node, suggesting that it functions as the central organizing principle of the field. This prominence reflects a gradual shift from viewing indigenous communities primarily as subjects of educational research toward recognizing them as producers and custodians of legitimate knowledge. Such a shift is consistent with decolonial perspectives that seek to challenge Eurocentric knowledge hierarchies and promote epistemic justice by validating historically marginalized ways of knowing (de Sousa Santos, 2018; Mignolo, 2011).

The strong associations among local wisdom, traditional knowledge, and sustainability further indicate that decolonizing education has increasingly been linked to contemporary global concerns, particularly environmental sustainability and community resilience. Rather than functioning as isolated cultural concepts, these themes collectively demonstrate how locally grounded knowledge is being integrated into broader discussions on sustainable development, climate adaptation, and culturally responsive educational practices. This conceptual convergence reflects growing recognition that indigenous knowledge systems contribute not only to cultural preservation but also to addressing complex social and environmental challenges.

Secondary thematic clusters involving multicultural education, ethnobotany, human knowledge systems, and community-based learning illustrate the expanding interdisciplinary scope of the field. These concepts connect educational research with biodiversity conservation, cultural heritage preservation, environmental governance, and community engagement, demonstrating that decolonizing education extends well beyond formal curriculum studies. The diversity of these interconnected themes highlights the evolving intellectual breadth of the field and its capacity to integrate multiple disciplinary perspectives.

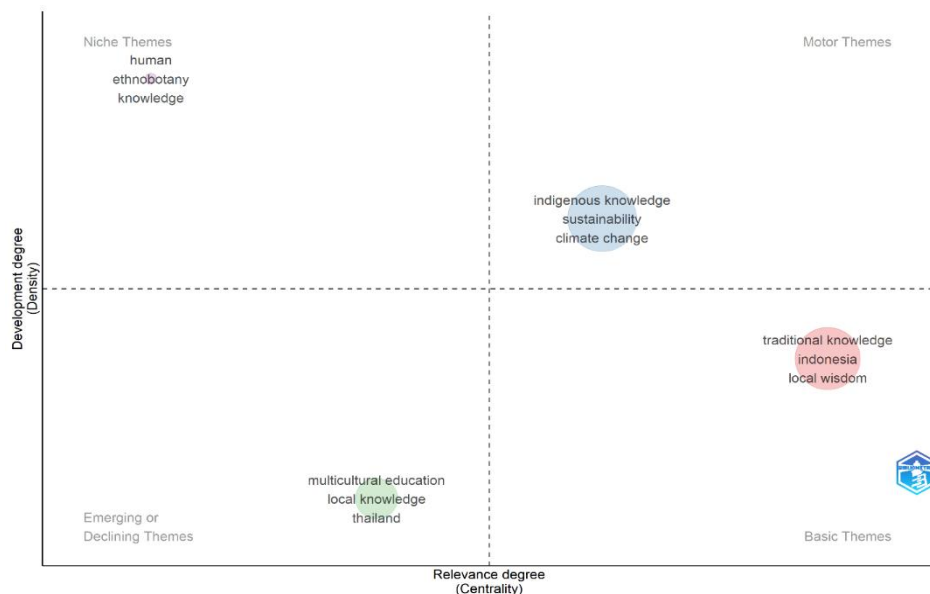
Viewed through the Sociology of Knowledge (Berger & Luckmann, 1966), the keyword network illustrates how scholarly communities collectively construct and legitimize new bodies of knowledge. The emergence of indigenous knowledge as the dominant conceptual node suggests an ongoing transformation in educational scholarship, wherein locally grounded epistemologies increasingly occupy positions that have historically been dominated by Eurocentric frameworks. This transformation reflects broader efforts to redefine what constitutes legitimate educational knowledge and to promote more pluralistic and culturally inclusive approaches to teaching, learning, and knowledge production.

The science mapping analyses demonstrate that the intellectual structure of decolonizing education is characterized by an interdisciplinary publication landscape, regionally concentrated collaboration networks, and a conceptually cohesive core centered on indigenous knowledge and sustainability. Together, these findings indicate that the field is evolving toward a more integrated and internationally visible body of scholarship while continuing to advance the recognition of diverse epistemologies within educational research

3.4 Thematic Evolution of Decolonizing Education Research

To further examine the intellectual development of decolonizing education research, thematic mapping was conducted using Bibliometrix/Biblioshiny. Unlike keyword co-occurrence analysis, which identifies conceptual relationships among research topics, thematic mapping evaluates the relative centrality and density of themes, thereby indicating their importance and stage of development within the scientific literature (Aria & Cuccurullo, 2017; Donthu et al., 2021). Thematic maps classify research topics into four categories: motor themes, basic themes, niche themes, and emerging or declining themes, providing insights into the evolution of scholarly priorities over time.

Figure 7 illustrates the thematic structure of decolonizing education research in Southeast Asia.



The thematic map reveals an intellectually dynamic field characterized by both established research traditions and emerging areas of inquiry. Rather than representing isolated topics, the identified themes illustrate how scholarly attention has progressively shifted toward the recognition of indigenous epistemologies as legitimate foundations of educational knowledge. This progression reflects broader efforts to challenge historically dominant Eurocentric educational paradigms and promote more culturally inclusive approaches to teaching, learning, and knowledge production.

The motor themes comprise indigenous knowledge, sustainability, and climate change, indicating that these topics are both highly developed and central to the intellectual structure of the field. Their position within the upper-

right quadrant suggests that they serve as the principal drivers of contemporary scholarship on decolonizing education. The prominence of indigenous knowledge demonstrates a significant transformation in educational research, where indigenous epistemologies are increasingly recognized not merely as objects of cultural preservation but as legitimate systems of knowledge capable of informing curriculum innovation, environmental governance, and sustainable development. Likewise, the close association between sustainability and climate change reflects the growing recognition that indigenous ecological knowledge contributes valuable perspectives for addressing contemporary environmental challenges. From a decolonial perspective, these developments represent a shift toward epistemic justice, whereby historically marginalized knowledge systems are increasingly acknowledged as valid contributors to educational theory and practice (de Sousa Santos, 2018; Mignolo, 2011).

In contrast, traditional knowledge, local wisdom, and Indonesia are positioned within the basic themes quadrant, indicating that these topics remain central to the field but exhibit comparatively lower levels of conceptual development. Their location suggests that they function as foundational concepts underpinning decolonizing education while offering considerable opportunities for further theoretical refinement. Much of the existing scholarship has focused on documenting and preserving indigenous practices within local educational contexts. However, comparatively fewer studies have examined how these concepts contribute to broader sociological debates concerning knowledge production, curriculum transformation, and educational equity. This finding indicates that future research should move beyond descriptive documentation toward developing more robust theoretical frameworks that explain how local wisdom and traditional knowledge reshape educational systems.

The niche themes, including ethnobotany, human, and knowledge, exhibit high internal development but relatively low centrality within the broader research field. These themes represent specialized areas of scholarship that have established mature research communities but remain only loosely connected to mainstream educational discourse. Much of this work examines the application of indigenous ecological knowledge, biodiversity conservation, and community-based resource management. Although these studies contribute significantly to understanding indigenous knowledge systems, stronger integration with educational theory could enhance their broader relevance to decolonizing education.

Meanwhile, multicultural education, local knowledge, and Thailand are positioned within the emerging or declining themes quadrant. Their location suggests areas undergoing intellectual transition rather than indicating declining importance. In particular, the emergence of multicultural education reflects expanding scholarly attention to educational inclusion, cultural diversity, and pluralistic learning environments. As Southeast Asian societies continue to experience globalization, migration, and increasing cultural interaction, multicultural education has become increasingly relevant for promoting equitable educational opportunities while respecting diverse identities. Rather than replacing indigenous knowledge, this emerging theme complements decolonizing education by broadening discussions of educational justice beyond indigenous communities to encompass wider issues of diversity, inclusion, and intercultural understanding.

From the perspective of the Sociology of Knowledge (Berger & Luckmann, 1966), the thematic evolution demonstrates how academic communities collectively construct, legitimize, and transform educational knowledge over time. Themes that currently occupy central positions represent concepts that have gained wider acceptance within the scholarly community, whereas emerging themes illustrate ongoing negotiations regarding future research priorities. This evolution reflects the dynamic nature of knowledge production, where social, political, environmental, and educational contexts continually shape the development of scientific inquiry.

Overall, the thematic map indicates that decolonizing education has evolved from a field primarily concerned with documenting indigenous cultures toward a more theoretically informed area of scholarship addressing epistemic justice, educational transformation, and sustainable development. The progression from foundational concepts such as traditional knowledge and local wisdom toward more integrated themes centered on indigenous knowledge and sustainability demonstrates an expanding intellectual agenda that increasingly recognizes diverse epistemologies as essential to addressing contemporary educational and societal challenges.

Table 5. Topical Classification of Research Themes

Theme Category	Representative Keywords	Sociological Interpretation
Motor Themes	Indigenous knowledge; Sustainability; Climate change	Highly developed and central themes that drive the intellectual evolution of decolonizing education and advance epistemic justice through the recognition of indigenous epistemologies.
Basic Themes	Traditional knowledge; Local wisdom; Indonesia	Foundational concepts that underpin the field but require greater theoretical integration into discussions of curriculum transformation, knowledge production, and educational equity.
Niche Themes	Ethnobotany; Human; Knowledge	Specialized interdisciplinary areas with strong internal development but limited influence on the broader discourse of decolonizing education.
Emerging/Declining Themes	Multicultural education; Local knowledge; Thailand	Evolving themes reflecting increasing attention to cultural diversity, educational inclusion, and changing regional priorities within Southeast Asian education.

The thematic classification further demonstrates that the evolution of decolonizing education is characterized by a gradual shift from documenting indigenous cultural practices toward developing broader theoretical perspectives that integrate indigenous epistemologies into contemporary educational discourse. The coexistence of mature, foundational, specialized, and emerging themes indicates that the field remains intellectually dynamic, with substantial opportunities for future research to strengthen theoretical integration, expand interdisciplinary collaboration, and further advance the decolonization of educational knowledge.

4. Discussions

4.1. Decolonizing Knowledge Production

The findings demonstrate that research on decolonizing education has evolved from a relatively marginal area of inquiry into an increasingly recognized field of scholarly investigation. The substantial increase in publications after 2015 suggests growing academic attention to indigenous knowledge systems, culturally responsive pedagogies, and educational reforms that challenge the dominance of Eurocentric knowledge traditions. Rather than representing a simple increase in research productivity, this trend reflects broader transformations in the ways educational knowledge is produced, legitimized, and disseminated. From the perspective of the Sociology of Knowledge, scientific knowledge is socially constructed through institutional, cultural, and historical processes rather than existing independently of society (Berger & Luckmann, 1966). Consequently, the observed expansion of scholarship indicates that indigenous epistemologies are gaining greater legitimacy within educational research and are increasingly recognized as important contributors to curriculum development and educational innovation.

The interdisciplinary distribution of publications across education, environmental sciences, anthropology, ethnobiology, and sustainability studies further illustrates that decolonizing education has become a shared intellectual concern rather than the exclusive domain of educational research. Such interdisciplinarity reflects the complex nature of educational decolonization, which involves cultural identity, environmental stewardship, social justice, and community participation. As noted by Donthu et al. (2021), emerging research fields commonly develop across multiple disciplines before achieving conceptual consolidation. The absence of a single dominant disciplinary outlet therefore reflects the evolving nature of the field rather than a lack of scholarly maturity.

4.2. Indigenous Knowledge as Educational Resistance

The prominence of indigenous knowledge, traditional knowledge, and local wisdom within the conceptual structure of the field demonstrates that decolonizing education extends beyond preserving cultural heritage. Instead, these concepts function as forms of educational resistance that challenge historically dominant Eurocentric curricula by recognizing indigenous communities as legitimate producers of knowledge. Decolonizing education therefore involves not only incorporating indigenous content into existing curricula but also transforming the epistemological assumptions that determine whose knowledge is considered valid within formal education (Mignolo, 2011; Smith, 2021).

The emergence of indigenous knowledge as the principal motor theme further suggests that educational scholarship is increasingly repositioning local epistemologies as valuable resources for addressing contemporary societal challenges, including environmental sustainability, climate resilience, and community development. This shift reflects what de Sousa Santos (2018) describes as epistemic justice, whereby historically marginalized knowledge systems are acknowledged alongside dominant scientific traditions. Rather than viewing indigenous knowledge as supplementary to formal education, contemporary scholarship increasingly recognizes it as an essential foundation for culturally relevant and socially responsive learning.

The thematic evolution observed in this study also indicates that the field is moving beyond descriptive documentation of indigenous practices toward broader theoretical discussions concerning educational transformation. This intellectual progression demonstrates increasing recognition that decolonizing education requires structural changes in curriculum design, teacher preparation, and educational policy rather than isolated classroom interventions.

4.3. Regional Inequalities in Global Knowledge Production

One of the most notable findings is the concentration of scholarly production within Southeast Asia, particularly in Indonesia, Malaysia, and Thailand. Unlike many educational research fields that are dominated by institutions in the Global North, decolonizing education research appears to be driven primarily by countries where indigenous communities, cultural diversity, and postcolonial educational reforms remain highly relevant. This regional concentration suggests that the production of knowledge is closely connected to local historical experiences and sociocultural realities.

However, despite the region's leadership in publication output, the collaboration network remains relatively fragmented, with research partnerships concentrated within national or institutional clusters. From Bourdieu's (1988) concept of the scientific field, such collaboration patterns reflect unequal access to academic resources, institutional prestige, research funding, and international scholarly networks. Differences in language, funding opportunities, and publication infrastructure continue to shape participation in global scientific communities, resulting in uneven patterns of international collaboration.

These findings also illustrate persistent inequalities in global knowledge production. While Southeast Asian scholars generate substantial empirical knowledge on indigenous education, opportunities to influence international educational discourse remain unevenly distributed. Decolonial scholars argue that colonial legacies continue to influence whose knowledge becomes internationally visible and whose epistemologies remain marginalized within global academic systems (de Sousa Santos, 2018; Mignolo, 2011). Strengthening cross-national and interdisciplinary collaborations may therefore contribute not only to greater research productivity but also to reducing epistemic inequalities within international educational scholarship.

4.4. Toward Epistemic Justice in Education

The thematic evolution identified in this study suggests that decolonizing education is increasingly aligned with broader international efforts to promote inclusive, equitable, and culturally responsive education. The prominence of themes related to indigenous knowledge, sustainability, and climate change reflects growing recognition that educational systems should value diverse knowledge traditions in addressing complex global challenges.

This direction is consistent with the United Nations Sustainable Development Goal 4, which emphasizes inclusive and equitable quality education and lifelong learning opportunities for all (United Nations, 2015). Likewise, UNESCO (2021) advocates educational approaches that recognize cultural diversity, indigenous knowledge, and local contexts as essential components of sustainable development and global citizenship. The integration of indigenous epistemologies into formal education therefore represents not only curriculum reform but also a broader commitment to educational equity and social inclusion.

From the perspective of the Sociology of Knowledge, the increasing visibility of indigenous knowledge reflects an ongoing transformation in the social construction of educational legitimacy (Berger & Luckmann, 1966). Concepts that were once marginalized within mainstream educational discourse are gradually becoming central components of educational theory and practice. This transformation illustrates a broader movement toward knowledge democracy, where multiple epistemological traditions are recognized as legitimate contributors to educational innovation and societal development.

Collectively, these findings suggest that the future of decolonizing education lies not simply in expanding research productivity but in strengthening international collaboration, fostering interdisciplinary scholarship, and developing theoretical frameworks that promote epistemic plurality. Such efforts may contribute to more equitable systems of knowledge production while supporting educational policies that are culturally responsive, socially just, and sustainable.

5. Conclusion

This study mapped the knowledge structure and development of research on decolonizing education in Southeast Asia using 1,258 Scopus-indexed journal articles published from 1993 to 2025. The findings show a substantial increase in scholarly production, particularly after 2015, indicating growing academic interest in indigenous knowledge, culture-based pedagogy, sustainability, and related educational concerns.

The bibliometric analysis further shows that knowledge production is concentrated in several Southeast Asian countries, while scholarly collaboration remains comparatively fragmented. The conceptual structure of the field is centered on indigenous knowledge, traditional knowledge, local wisdom, sustainability, and climate change, with indigenous knowledge, sustainability, and climate change emerging as major themes. Thematic evolution also indicates an expanding research agenda toward multicultural education and other interdisciplinary concerns. These patterns demonstrate the increasingly interconnected nature of decolonizing education research while also revealing opportunities for broader regional and international collaboration.

Overall, the study demonstrates the value of bibliometric knowledge mapping as a data-driven approach for examining the structure, networks, and evolution of an interdisciplinary research field. By identifying dominant concepts, major contributors, collaboration patterns, and emerging themes, the study provides an evidence-based foundation for future research on decolonizing education in Southeast Asia. Future studies may extend this knowledge map by incorporating additional databases, multilingual literature, and complementary qualitative approaches to further examine how indigenous knowledge and culture-based pedagogies are represented, connected, and developed across the region.

Policy Implications

The findings have several implications for educational policy, research governance, and institutional practice. First, education systems should strengthen the integration of indigenous knowledge and local wisdom into curriculum development, teacher education, and assessment practices, recognizing these knowledge systems as legitimate sources of educational innovation rather than supplementary cultural content. Such efforts support culturally responsive education and contribute to more inclusive learning environments.

Second, governments, higher education institutions, and research funding agencies should invest in strengthening institutional capacity for research on indigenous knowledge and decolonizing education. Targeted

support for interdisciplinary and community-engaged research can facilitate the development of evidence-based educational policies that reflect local cultural contexts while contributing to international scholarship.

Third, the fragmented collaboration networks identified in this study underscore the need to promote stronger regional and international research partnerships. Expanding collaborative networks across Southeast Asia and beyond would enhance knowledge exchange, increase the global visibility of locally grounded scholarship, and reduce persistent inequalities in global knowledge production.

Fourth, educational policies should align decolonizing education with international commitments to inclusive and equitable education, particularly Sustainable Development Goal 4 (Quality Education) and UNESCO's vision of education as a means of promoting cultural diversity, social inclusion, and sustainable development (United Nations, 2015; UNESCO, 2021). Recognizing indigenous epistemologies within formal education contributes to broader efforts to achieve educational equity while respecting cultural diversity.

Finally, higher education institutions should encourage interdisciplinary collaboration among education, sociology, anthropology, environmental sciences, and indigenous studies to strengthen theoretical development within the field. Such collaboration can contribute to more comprehensive approaches to curriculum reform, educational policy, and community engagement while advancing the broader goals of educational decolonization.

Limitations and Future Research

Several limitations should be considered when interpreting the findings of this study.

First, the analysis was limited to publications indexed in the Scopus database. Although Scopus provides broad international coverage and is widely used in bibliometric research, relevant studies indexed exclusively in other databases, such as Web of Science, ERIC, Dimensions, or regional indexing systems, were not included. Consequently, the findings may not fully capture the complete body of scholarship on decolonizing education.

Second, only English-language journal articles were included in the analysis. Given the localized nature of indigenous knowledge and decolonizing education, important research published in Southeast Asian languages may have been excluded, potentially underrepresenting locally produced scholarship and community-based knowledge.

Third, bibliometric indicators are subject to citation lag, whereby recently published studies have had less time to accumulate citations. As a result, newer but potentially influential contributions may appear less prominent than older publications.

Fourth, bibliometric analyses are inherently dependent on the quality and consistency of author-supplied metadata, including titles, abstracts, and keywords. Variations in terminology, keyword selection, and indexing practices may influence thematic clustering and network visualization despite efforts to standardize and harmonize keywords during data cleaning.

Finally, while bibliometric analysis effectively identifies publication trends, collaboration networks, and conceptual structures, it does not evaluate the substantive content, methodological quality, or theoretical depth of individual studies. The absence of a qualitative synthesis limits the ability to examine how indigenous knowledge and decolonizing education are conceptualized across different educational contexts.

Future research should address these limitations by incorporating multiple bibliographic databases, including non-English publications, and employing mixed-method approaches that combine bibliometric analysis with systematic or qualitative literature reviews. Such approaches would provide a more comprehensive understanding of how decolonizing education is interpreted, implemented, and theorized across diverse sociocultural and educational settings while further advancing discussions on epistemic justice, educational transformation, and knowledge democracy.

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