



## Integrating local wisdom into learning in school's curriculum: A bibliometric analysis

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### ABSTRACT

This study presents a bibliometric analysis of research on integrating local wisdom into school learning, providing a comprehensive overview of scholarly developments from 2010 to 2024. Utilizing the Scopus database, the bibliometric method retrieved an initial 284 documents, refined to 145 after applying inclusion criteria. The analysis reveals a significant annual growth rate of 28.21 percent in publications, indicating a burgeoning interest in this field. Indonesia emerged as the leading contributor in the number of publications and citations; the most productive authors and the most cited documents also originated from Indonesia. Co-occurrence keyword analysis identified vital themes such as character education, the development of learning media, and the innovative use of technology—including mobile learning and augmented reality—to facilitate local wisdom integration. Despite the predominance of Indonesian research, international collaboration remains limited, highlighting opportunities for comparative studies and broader global engagement. The findings suggest integrating local wisdom into education enhances cultural preservation, student engagement, and moral development. Future research should explore technology's role in this integration, assess long-term educational outcomes, and encourage international partnerships to enrich the global discourse on culturally responsive education.

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### ABSTRAK

Studi ini menyajikan analisis bibliometrik penelitian tentang integrasi kearifan lokal ke dalam pembelajaran di sekolah, memberikan gambaran komprehensif tentang perkembangan ilmiah dari tahun 2010 hingga 2024. Dengan memanfaatkan basis data Scopus, metode bibliometrik awalnya memperoleh 284 dokumen, yang kemudian disaring menjadi 145 setelah menerapkan kriteria inklusi. Analisis menunjukkan tingkat pertumbuhan publikasi tahunan yang signifikan sebesar 28,21 persen, mengindikasikan minat yang semakin meningkat di bidang ini. Indonesia muncul sebagai kontributor terdepan dalam hal jumlah publikasi dan sitasi; penulis paling produktif dan dokumen yang paling banyak disitasi juga berasal dari Indonesia. Analisis ko-occurrence kata kunci mengidentifikasi tema-tema kunci seperti pendidikan karakter, pengembangan media pembelajaran, dan penggunaan teknologi inovatif—termasuk pembelajaran mobile dan augmented reality—untuk memfasilitasi integrasi kearifan lokal. Meskipun penelitian Indonesia mendominasi, kolaborasi internasional masih terbatas, menyoroti peluang untuk studi komparatif dan keterlibatan global yang lebih luas. Temuan ini menunjukkan bahwa mengintegrasikan kearifan lokal ke dalam pendidikan meningkatkan pelestarian budaya, keterlibatan siswa, dan pengembangan moral. Penelitian selanjutnya harus mengeksplorasi peran teknologi dalam integrasi ini, menilai hasil pendidikan jangka panjang, dan mendorong kemitraan internasional untuk memperkaya diskursus global tentang pendidikan yang responsif secara budaya.

**Kata Kunci:** *bibliometrik; kearifan lokal; kurikulum; pembelajaran; sekolah*

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## INTRODUCTION

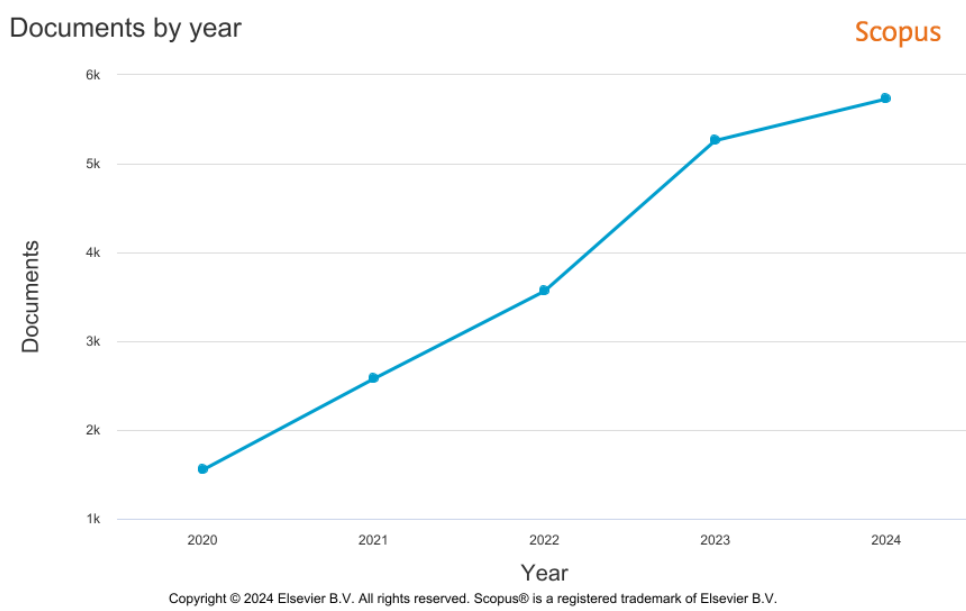
As globalization accelerates and societies become more interconnected, there is a growing concern that indigenous knowledge and traditional cultural practices may be marginalized or lost altogether (Hasan, 2020; Todd et al., 2023). A lot of research stated the same thing, including Vinao in 2021 in a paper titled **School Culture(s): Historiography of a Polysemic Concept**, from the book **Folds of Past, Present and Future: Reconfiguring Contemporary Histories of Education**. Education systems play a pivotal role in either perpetuating this marginalization or serving as a conduit for preserving and revitalizing local wisdom (Famella et al., 2023; Parwati et al., 2018). By embedding local wisdom into learning processes, schools can contribute to developing students who are academically proficient, culturally grounded, and socially responsible.

Local wisdom, often encapsulated in a community's customs, beliefs, and practices, represents a rich repository of knowledge accumulated over generations (Hidayati et al., 2020; Syamsi & Tahar, 2021). It encompasses indigenous technologies, ecological knowledge, moral values, and social norms that have sustained communities and their environments. In the educational context, integrating local wisdom means more than simply adding cultural anecdotes to the curriculum; it involves reorienting teaching and learning processes to reflect the lived experiences and worldviews of the students (Eko et al., 2020). This approach fosters a more inclusive and engaging learning environment, enhances the relevance of education, and promotes the development of critical thinking skills by allowing students to analyze and appreciate the value of their cultural heritage.

Integrating local wisdom into education is crucial for multiple reasons. It bridges the gap between formal education and students' sociocultural contexts, enhancing engagement and academic performance and valuing indigenous knowledge systems. Aids in preserving cultural heritage by ensuring schools transmit not only academic content but also the cultural values and practices of the community (Haling, 2016; Villa & Knutas, 2020). Lastly, local wisdom offers valuable insights into sustainable living and environmental stewardship, enriching environmental education and promoting sustainable practices among the younger generation—an essential contribution amid global challenges like climate change and biodiversity loss (Asmayawati et al., 2024; Druker-Ibáñez & Cáceres-Jensen, 2022; Lestari & Suyanto, 2024).

Given the significance of this topic, a comprehensive understanding of the existing research is essential. Bibliometric analysis offers a valuable methodology for systematically reviewing the scholarly literature on integrating local wisdom into school learning (Garcia, 2023; Prados-Peña et al., 2023). By analyzing publication patterns, citation networks, and research trends, bibliometric studies can identify key themes, influential authors, and gaps in the literature. This information is crucial for educators, policymakers, and researchers who aim to develop effective strategies for integrating local wisdom into educational practices.

Research employing bibliometric methods is not something new. Data from Scopus indicate that this method's studies have consistently increased over the past five years. Figure 1 illustrates the annual rise in publications utilizing bibliometric methods during this period. In the educational context—particularly in studies examining local wisdom and its integration into the curriculum—several prior investigations have been conducted by researchers from Indonesia and globally. For example, Misbah et al. demonstrated that a significant portion of research focuses on integrating local wisdom into physics education (Misbah et al., 2022). Similarly, Utami et al. conducted bibliometric research on local wisdom but focused on physics learning (Utami et al., 2024). Based on these studies, one of the novelties offered in this research is the emphasis on analyzing publications directed toward curriculum integration rather than concentrating on a single study or specific subject area.



**Figure 1.** Research trend bibliometric methods  
*Source: scopus.com processed by the author 2024*

This research is significant for informing educational policy and practice at multiple levels. Theoretically, it contributes to culturally responsive pedagogy and the decolonization of education by integrating indigenous knowledge with contemporary theories. Practically, it guides curriculum development and instructional strategies, helping educators effectively incorporate local wisdom to enhance student engagement and learning outcomes. At the policy level, it provides evidence-based insights for educational reform and resource allocation, promoting cultural inclusivity and identifying areas where further research and investment are needed.

The primary objective of this bibliometric analysis is to systematically examine the scholarly literature on integrating local wisdom into school education. The study analyzes publication trends, country analysis, author and document analysis, and co-occurrence keyword analysis. By achieving these objectives, the study seeks to provide a comprehensive overview of the current research on integrating local wisdom into learning in schools. This will contribute to academic knowledge and have practical implications for educators and policymakers aiming to create more inclusive and effective educational environments.

## LITERATURE REVIEW

### Local Wisdom

Local wisdom refers to the cultural knowledge and practices developed by indigenous communities over generations, deeply intertwined with their environment and social life. This wisdom encompasses sustainable use and management of natural resources, ensuring environmental preservation and community well-being (Handayani & Suparno, 2023; Maria, 2018). In education, local wisdom refers to integrating indigenous knowledge, cultural values, and traditional practices into the educational curriculum to foster character development, cultural preservation, and sustainable development. This concept emphasizes the importance of contextual learning that connects academic content with the local culture and environment (Ferdinand Hasan et al., 2024; Karmini et al., 2021; Norhadi & Juliati, 2024).

One of the critical roles of local wisdom in education is character building. By incorporating values such as cooperation, kinship, and respect for the environment, educational programs can instill essential moral principles in students (Ferdinand Hasan et al., 2024). In addition to character development, local wisdom plays

a crucial role in cultural preservation (Karmini et al., 2021). Incorporating local customs and traditions into education helps preserve cultural heritage and ensures that traditional knowledge is passed down to future generations. Moreover, local wisdom supports sustainable development by teaching students about the importance of environmental conservation and sustainable living practices (Norhadi & Juliati, 2024).

### **School Curriculum**

A school curriculum encompasses the educational content and learning experiences a school provides. It is designed to meet the educational standards and requirements set by national or regional authorities and can be customized by individual schools to address specific needs and goals. This customization allows schools to create a more relevant and effective educational experience for their students (Codd, 1982; Gleeson & O'Neill, 2017).

One of the critical components of a school curriculum is the inclusion of national and school-specific programs. The curriculum includes mandatory national educational programs that ensure a consistent standard of education across the country. Schools also develop specific curricula tailored to their unique student populations and community contexts. This dual structure enables schools to better meet the needs of their students and communities by addressing local interests, cultural aspects, and specific educational goals. Another crucial element is the influence of curricular philosophies on the design and implementation of school curricula. Different educational philosophies guide how curricula are structured and delivered. For example, the Chinese Special School Curriculum Standards reflect general curriculum access philosophies but differ significantly from the general education standards (Xin et al., 2024). These differences highlight how curricular philosophies can shape educational approaches to meet the diverse needs of learners, especially those requiring special education services.

### **Bibliometric**

Bibliometrics involves the application of statistical methods to analyze academic literature, such as books and journal articles, to assess the impact and influence of research outputs. This field plays a crucial role in understanding how knowledge is disseminated within the scholarly community and how research influences subsequent studies (Aboudahr & Govindarajoo, 2023; Damayanti et al., 2023; Wahid et al., 2023). One of the primary purposes and applications of bibliometrics is in research assessment. By evaluating the quality and impact of research, bibliometric analyses often influence essential decisions related to academic appointments, funding allocations, and journal rankings. Institutions and funding bodies use bibliometric data to identify influential research and researchers, thereby shaping the direction of future scholarly endeavors (Manterola et al., 2024).

## **METHODS**

This study employs a bibliometric analysis to systematically examine the scholarly literature on integrating local wisdom into school learning (Arjaya et al., 2024; Rosário & Raimundo, 2024; Verma et al., 2024). Bibliometric analysis is a quantitative method used to evaluate the academic literature by analyzing publication patterns, citation relationships, and research trends within a specific field (Arjaya et al., 2024; Güngör Göksu, 2023; Tigre et al., 2023). This approach objectively assesses the existing knowledge base, identifying key contributors and highlighting research gaps.

## Data Source

The primary data source for this study is the Scopus database, one of the most comprehensive and widely recognized repositories of peer-reviewed literature (Cecilia-Martín et al., 2020). Scopus was chosen due to its extensive coverage of academic journals across various disciplines, ensuring a robust and representative dataset for analysis (Rejeb et al., 2023; Suyo-Vega et al., 2022).

## Search Strategy

A meticulous search strategy was developed to retrieve relevant literature. The search utilized Boolean operators to combine keywords effectively, ensuring the results were comprehensive and focused on the topic of interest. The specific search terms used were:

*TITLE-ABS-KEY (curriculum OR school OR teacher OR student) AND TITLE ("local wisdom")*

This search string was designed to capture publications that discuss local wisdom within the context of schools, teachers, or students, ensuring relevance to the educational integration of local wisdom.

## Inclusion Criteria

The following inclusion criteria were applied in **Table 1** below to refine the search results and maintain the quality and relevance of the data.

**Table 1.** Inclusion Criteria

No	Category	Criteria
1	Publication Year	Publish Between 2010-2024
2	Language	Article Written in English
3	Publication Type	Article Journal

*Source: Research 2024*

The inclusion criteria for this bibliometric analysis focused on several key aspects to ensure the relevance and quality of the selected publications. First, only articles published between 2010 and 2024 were included to capture the most recent developments and trends in the field over the past decade and up to the current year. Second, publications were restricted to those available in English, ensuring accessibility and consistency for an international audience. Lastly, the analysis was limited to peer-reviewed journal articles, as these types of publications undergo rigorous academic scrutiny, enhancing the findings' reliability and credibility.

## Data Collection and Filtering

The initial search of the Scopus database using the specified search terms yielded 284 documents. Each document's metadata, including title, authors, abstract, keywords, publication year, journal name, and citation information, was extracted for preliminary review. After the initial retrieval, the inclusion criteria were systematically applied to filter the dataset, which was refined to 145 documents that met all the inclusion criteria. This final dataset serves as the basis for the bibliometric analysis.

## Data Analysis

The bibliometric analysis was carried out using specialized software tools such as VOSviewer and Bibliometrics in R, which enabled the visualization and interpretation of complex bibliometric data. The

analysis comprised several vital components. First, a descriptive analysis was conducted to examine publication trends, assess the most prolific authors, and identify influential journals. This helped to uncover growth patterns in the literature and recognize key contributors to the field. Next, citation analysis focused on identifying highly cited works and assessing the academic impact of publications and authors. In addition, keyword and co-word analysis facilitated thematic mapping by identifying common themes and emerging trends, while co-occurrence networks helped visualize the research domain's structure. Finally, a gap analysis was performed to highlight under-researched areas, suggesting potential directions for future studies.

### Limitations

While bibliometric analysis provides valuable insights, it is not without limitations. The reliance on a single database (Scopus) may exclude relevant studies indexed elsewhere. While necessary for consistency, language and document type restrictions may omit significant contributions in other languages or formats. These limitations are acknowledged, and the findings are interpreted within the context of these constraints.

## RESULTS AND DISCUSSION

### Descriptive Analysis

To provide comprehensive bibliographic data, we collect data from Scopus and then analyze using R Studio Biblioshiny to illustrate how the overview of the data was obtained (Amarathunga, 2024; Amarathunga et al., 2024; Manterola et al., 2024). Table 2 provides a global overview of the bibliometric data, covering the period from 2014 to 2024 with 145 documents from 81 sources. The field shows a high annual growth rate of 28.21%, with an average document age of 3.24 years, indicating that the research is relatively recent. Each document receives an average of 6.834 citations, and the dataset contains 5,662 references. There are 486 authors involved, with 14 single-authored documents, suggesting that most of the research is collaborative, as reflected by an average of 3.63 co-authors per document. International co-authorship accounts for 8.276%, showing moderate global collaboration in this research area.

**Table 2.** Documents Global Overview

No	Description	Results
1	Timespan	2014:2024
3	Sources	81
4	Documents	145
5	Annual Growth Rate %	28.21
6	Document Average Age	3.24
7	Average citations per doc	6.834
8	References	5662
9	Keywords Plus (ID)	72
10	Author's Keywords (DE)	443
11	Authors	486
12	Authors of single-authored docs	14
13	Single-authored docs	14
14	Co-Authors per Doc	3.63
15	International co-authorships %	8.276

*Source: Research 2024*

The data presented in **Table 2** suggests several essential insights into integrating local wisdom into school learning. The high annual growth rate of 28.21% indicates an emerging and rapidly growing research interest in this area, particularly since the average document age is just over three years. This

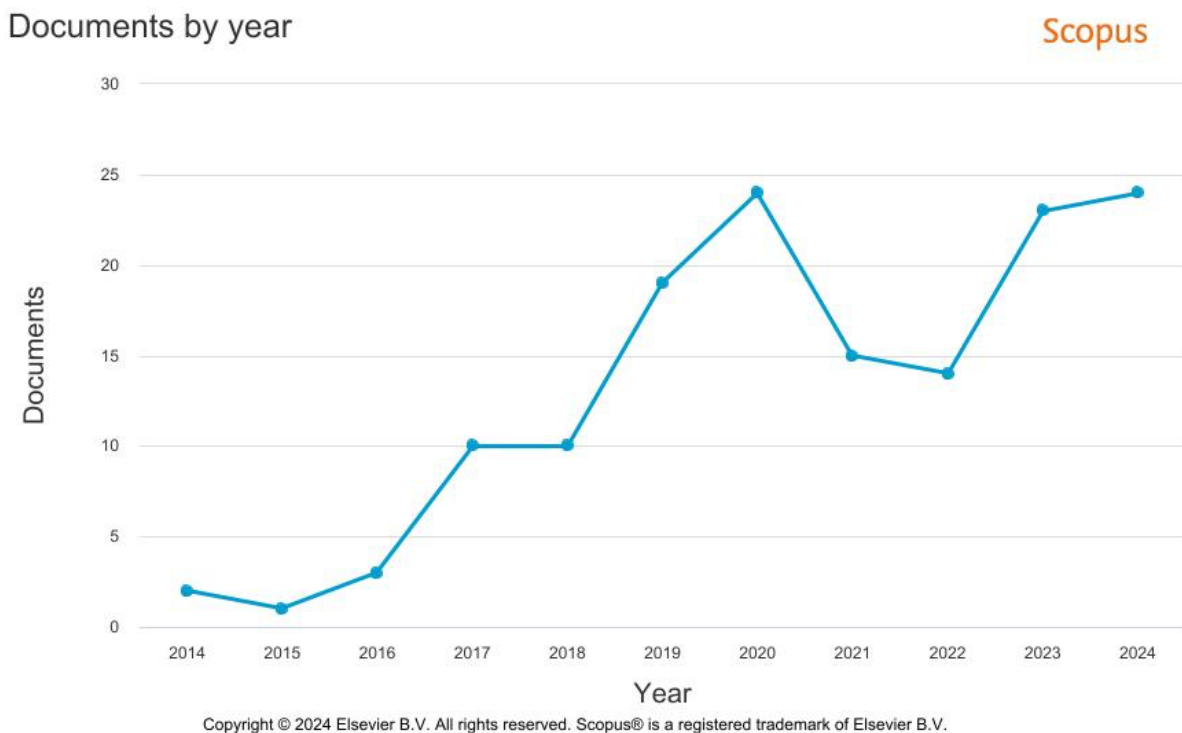


demonstrates that scholarly attention to local wisdom in education is gaining momentum, likely driven by global trends in culturally responsive pedagogy and sustainable educational practices. The citation rate of 6.834 citations per document further suggests that the field is receiving moderate to substantial recognition from the academic community, contributing to an evolving body of knowledge.

Moreover, the collaborative nature of the research is evident from the high number of co-authored papers, with an average of 3.63 authors per document. This indicates that integrating local wisdom into education is a multidisciplinary effort that requires input from various scholars and experts (Misbah et al., 2022; Muhammad et al., 2022; Utami et al., 2024). However, the relatively low percentage of international co-authorship (8.276%) points to a predominantly local or regional focus in the research. While this is understandable, given the context-specific nature of local wisdom, it also highlights an opportunity for increased international collaboration to broaden the scope and applicability of findings across different cultural and educational contexts. Overall, the data suggests a vibrant and growing field with strong potential for further development, particularly through fostering more international research partnerships.

## Publication Trend

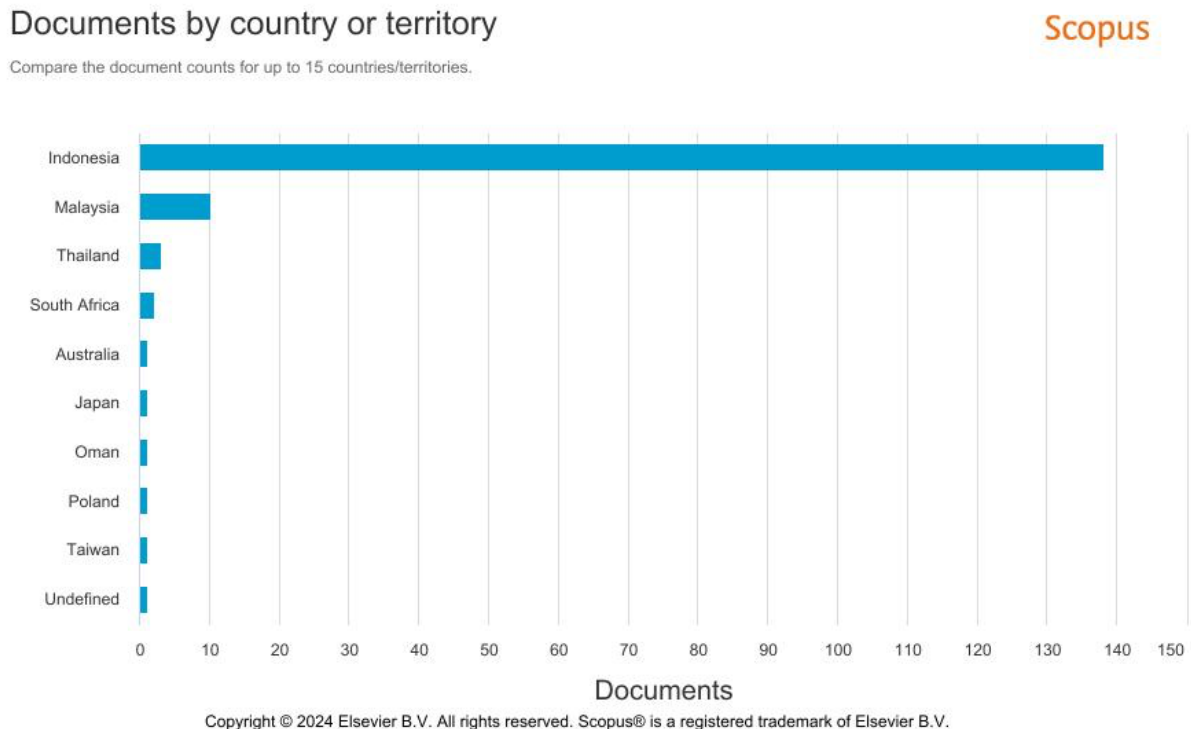
**Figure 2** shows the trend of documents published annually from 2014 to 2024. The data illustrates that research on integrating local wisdom into school learning has experienced significant growth, particularly since 2017. The sharp increase in publications in 2018-2020 suggests a rising interest in the topic, possibly driven by broader global discussions on culturally responsive education and sustainability (Brown et al., 2019; Scribner et al., 2021). The dip observed in 2021 might reflect disruptions caused by global events, such as the COVID-19 pandemic, which impacted research activities (Nahdi et al., 2021; Troya & Bailón, 2020; Wu, 2021). However, the recovery and stabilization of publication numbers in 2022 and beyond indicate a renewed focus on the subject. The general upward trend suggests that this field is still developing, with a sustained interest in recent years, signaling its importance in contemporary educational research (Amarathunga, 2024; Wahid et al., 2023).



**Figure 2.** Publication trend over time  
Source: scopus.com processed by the author 2024

## Country Analysis

**Figure 3** below illustrates the number of documents on local wisdom in education published by the top 10 most productive countries or territories. Indonesia is by far the most prolific contributor, with over 130 documents, followed by Malaysia, which has significantly fewer publications at around 20 documents. The remaining countries, such as Thailand, South Africa, Australia, Japan, Oman, Poland, Taiwan, and an undefined category, contribute much smaller numbers, each producing fewer than ten documents.



**Figure 3.** Top 10 Most Productive countries' Publication  
*Source: scopus.com processed by the author 2024*

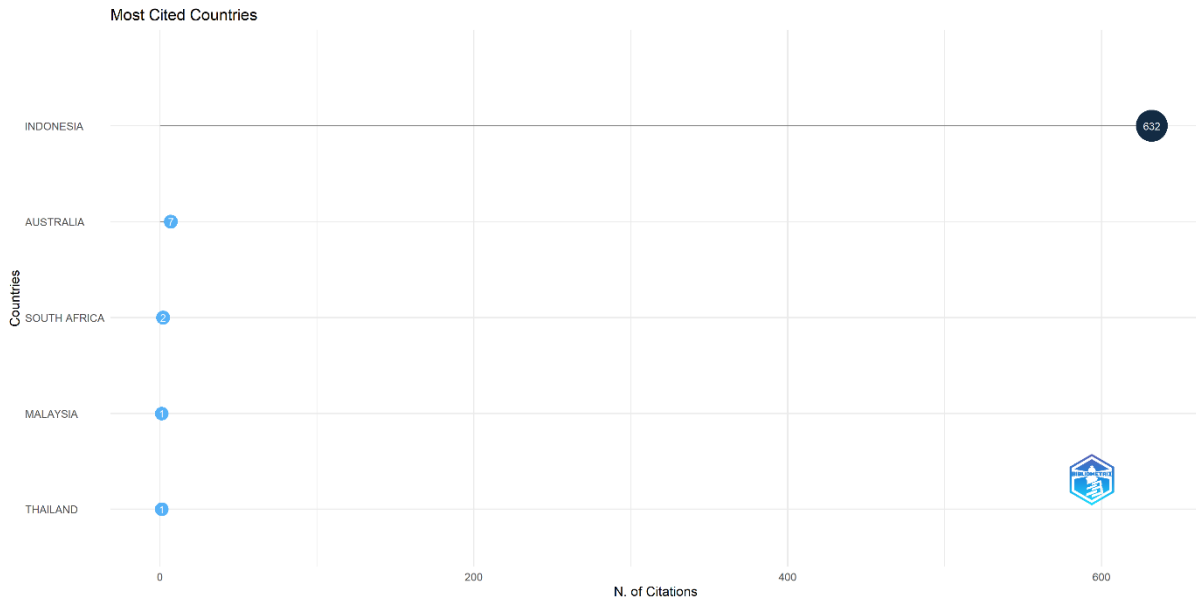
The overwhelming dominance of Indonesia in the publication count underscores its strong focus on integrating local wisdom into educational systems, likely due to the country's rich cultural heritage and the central role of local wisdom in its national identity and educational practices. The results of this study support the findings, which revealed that Indonesia leads in contributions to this field, with significant research output from Indonesian scholars. Malaysia also contributes to this field and shows much lower productivity, suggesting that although the topic is relevant in Southeast Asia, it may not be a central focus in many countries beyond Indonesia. The minimal contributions from other regions like South Africa, Australia, and Japan indicate a potential gap in research on local wisdom in education outside Southeast Asia, presenting opportunities for further studies and international collaboration to expand this field globally (Arjaya et al., 2024).

## Most Cited Country

In line with the earlier discussion identifying Indonesia as the country with the most publications, it also has the highest number of citations. **Figure 4** displays the countries with the highest citation counts for research on integrating local wisdom in education. Indonesia dominates with 632 citations, far surpassing other countries. Australia follows distantly with only seven citations, while South Africa has 2. Malaysia and Thailand contribute minimally, each with just 1 citation. This stark difference highlights Indonesia's significant influence and leadership in this research area. It reflects the country's strong academic focus



on the topic, aligning with its rich cultural diversity and commitment to incorporating local wisdom into its educational framework (Muhammad et al., 2022; Utami et al., 2024). The low citation counts for Australia, South Africa, Malaysia, and Thailand suggest that, although there is some global interest, the research remains concentrated in Indonesia. This indicates potential opportunities to expand research and collaborations on integrating local wisdom into education, particularly in countries where this area is underexplored (Wahid et al., 2023).



**Figure 4.** Most Cited Country  
 Source: R-Studio Biblioshiny processed by the author 2024

### Authorship Analysis

As discussed in the section on the most productive countries, the most productive authors also come from Indonesia. Table 3 lists the top 5 most prolific authors in the field of local wisdom in education, all based in Indonesia. The most prolific author is H. Kuswanto (Alfianti et al., 2023; Husna & Kuswanto, 2018; Kurniawan & Kuswanto, 2021) from Universitas Negeri Yogyakarta, followed by I. Wayan Suastra (Sanjayanti et al., 2022; Suastra et al., 2017) from Universitas Pendidikan Ganesha. Other contributors include Andayani from Universitas Sebelas Maret, Evita Anggereini from Universitas Jambi, and I. Wayan Citrawan from Universitas PGRI Mahadewa.

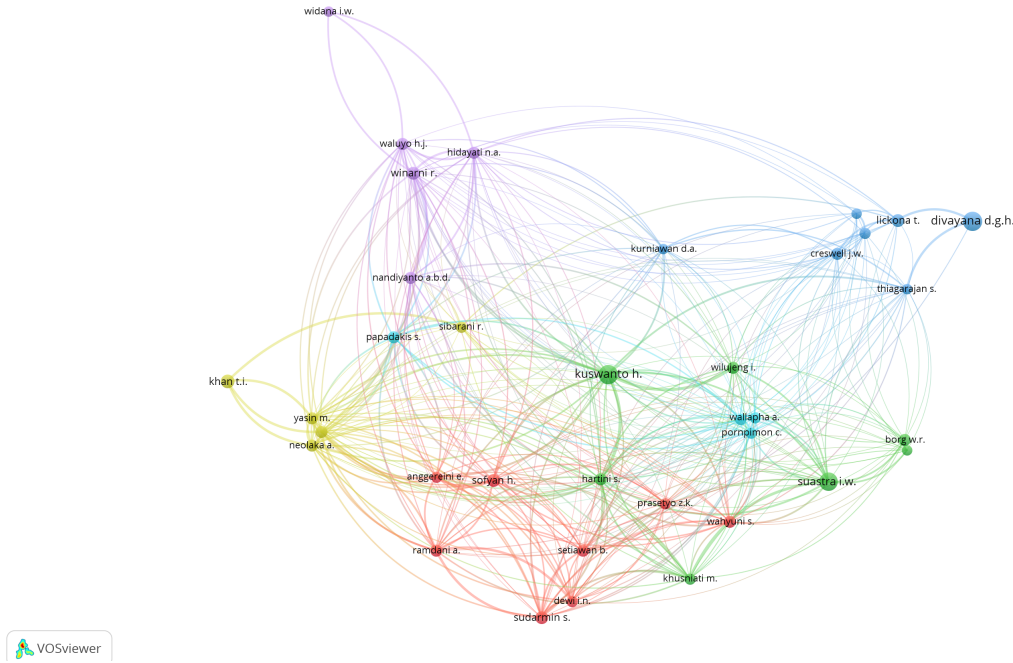
**Table 3.** Top 5 Most Productive Author

No	Author	Affiliation	Country
1	H. Kuswanto	Universitas Negeri Yogyakarta	Indonesia
2	I. Wayan Suastra	Universitas Pendidikan Ganesha	Indonesia
3	Andayani	Universitas Sebelas Maret	Indonesia
4	Evita Anggereini	Universitas Jambi	Indonesia
5	I. Wayan Citrawan	Universitas PGRI Mahadewa Indonesia	Indonesia

Source: Research 2024

After gathering the data in Table 3, we analyzed it to assess the impact of publications and authors within the academic community. This analysis used VOSviewer to examine how authors contribute to developing research on local school wisdom. Figure 5 illustrates the relationships between authors in a network visualization. The network is divided into clusters, represented by different colors (blue, green, yellow, purple, red, and light blue), which group authors who are frequently co-cited together. This clustering suggests thematic similarities in the literature they are associated with or the topics they commonly

contribute to. For example, Kuswanto H. appears as a central figure in the green cluster, indicating high citations and strong connections with other authors in the same cluster, such as Suastra I.W. and Harjanto I.



**Figure 5.** Co-Author relationships  
 Source: VOSviewer processed by the author 2024

**Most Cited Document**

**Table 4** presents the top 5 most-cited documents for integrating local wisdom into education. The most-cited paper is by Uge et al. (2019), with 65 citations, followed by Hidayati et al. (2020), with 64 citations (Uge et al., 2019; Hidayati, 2020). Both articles are published in the International Journal of Instruction. Setiawan et al. (2017) and Dwianto et al. (2017) each published papers in Jurnal Pendidikan IPA Indonesia, focusing on the development of science learning tools and modules based on local wisdom, with 56 and 47 citations, respectively (Setiawan et al., 2017; Dwianto et al., 2017). Lastly, Sofyan et al. (2019) have 36 citations for their work on E-modules for kindergartens in the European Journal of Educational Research (Sofyan et al., 2019).

**Table 4.** Most Cited Document

No	Author	Title	N. Citation	Year	Source
1	Hidayati et al.	Exploring the implementation of local wisdom-based character education among Indonesian higher education students	64	2020	International Journal of Instruction
2	Uge et al.	Development of social studies learning model based on local wisdom in improving students' knowledge and social attitude	65	2019	International Journal of Instruction
3	Setiawan et al.	The development of local wisdom-based natural science module to improve science literacy of students	56	2017	Jurnal Pendidikan IPA Indonesia
4	Dwianto et al.	The development of science domain based learning tool which is integrated with local wisdom to improve science process skill and scientific attitude	47	2017	Jurnal Pendidikan IPA Indonesia

No	Author	Title	N. Citation	Year	Source
5	Sofyan et al.	Development of E-modules based on local wisdom in central learning model at kindergartens in Jambi city	36	2019	European Journal of Educational Research

Source: *Research 2024*

The citation count for these articles highlights research's growing importance and influence on integrating local wisdom into educational practices, particularly in Indonesia. The high citation count of (Hidayati et al., 2020; Uge et al., 2019) suggests that developing character education and social studies learning models based on local wisdom resonates widely with educators and researchers. Additionally, the prominence of science-related studies by Setiawan and Dwianto reflects an increasing trend in embedding local wisdom into STEM education. The range of journals from both local (Indonesian) and international sources indicates the broadening recognition of this topic regionally and globally. This further illustrates the academic impact of integrating local cultural values into education.

### Co-Occurrence Keyword Analysis Networks

Table 5 shows the most frequently occurring keywords in the local wisdom and education research literature. The keyword "local wisdom" is the most dominant, appearing 99 times, highlighting it as the research's central theme. The next most frequent keyword is "character education," with 12 occurrences indicating a strong focus on the role of local wisdom in shaping students' moral and ethical development. The keywords "effectiveness" and "learning" appear 5 times, suggesting a significant emphasis on evaluating the outcomes of integrating local wisdom into educational settings.

Other keywords such as "android," "development," "e-module," "education," "learning media," and "local wisdom values" each appear 3 times, reflecting the integration of technology, educational tools, and cultural values into the local wisdom-based learning processes. The presence of keywords like "android" and "e-module" indicates an ongoing interest in using digital tools and technologies in education, especially in developing media that support local wisdom in learning environments. The relatively lower occurrences of these terms suggest they represent emerging trends or niche areas within the broader field of study.

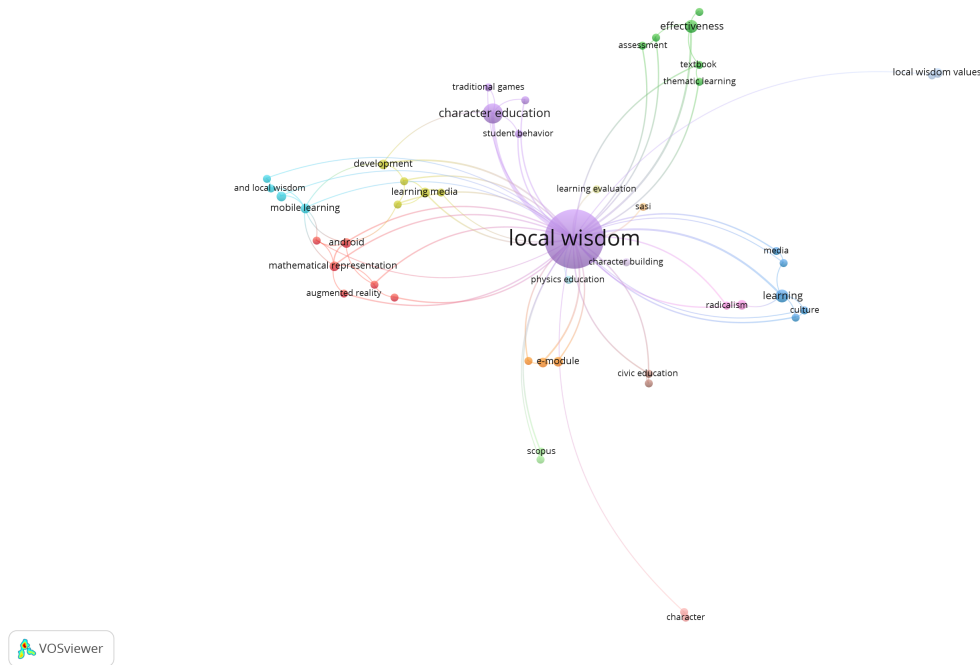
**Table 5.** Most Frequent Keyword

No	Keyword	Occurrences
1	local wisdom	99
2	character education	12
3	effectiveness	5
4	learning	5
5	Android	3
6	development	3
7	e-module	3
8	education	3
9	learning media	3
10	local wisdom values	3

Source: *Research 2024*

After identifying the most frequent keywords, we conducted a co-occurrence network analysis using VOSviewer, resulting in Figure 6. This analysis reveals several significant themes in studying local wisdom in education. One of the most prominent themes is "character education" which strongly focuses on how local wisdom influences students' moral and behavioral development. Another significant theme involves the integration of "learning media" and "mobile learning," suggesting that the use of digital tools and

technology is a crucial research area, reflecting efforts to modernize the delivery of local wisdom in education. The presence of terms like "augmented reality" and "android" points to an emerging trend of incorporating advanced technologies into educational practices involving local wisdom. Additionally, keywords such as "effectiveness" and "assessment" suggest a focus on evaluating the impact of local wisdom-based learning approaches. Overall, the figure highlights the diversity of research in this area, emphasizing the interplay between traditional knowledge and modern educational techniques.



**Figure 6.** Co-Occurrence Keyword Analysis  
*Source: VOSviewer processed by the author 2024*

The central keyword, "local wisdom," is surrounded by various clusters of associated terms, representing the most frequently co-occurring keywords in the literature and forming thematic groupings. For instance, keywords like "character education," "learning media," "development," "mobile learning," "augmented reality," and "effectiveness" show significant connections to "local wisdom." Each cluster is color-coded to represent different thematic areas within the research field.

1. *Cluster 1 (Purple): Character Education and Student Development*

This cluster centers around keywords like "character education," "character building," "student behavior," and "traditional games." It suggests an intense research focus on how local wisdom is used to develop students' moral and ethical values. Local wisdom, such as honesty, discipline, responsibility, tolerance, cooperation, politeness, and self-confidence, has been successfully integrated into lesson plans and textbooks for junior high school students in Indonesia (Sugiantoro et al., 2022). This approach has shown to be feasible and beneficial for moral education. In this context, local wisdom is integrated into educational programs aimed at character development, likely through culturally relevant activities such as traditional games or values-based education (Suhartini et al., 2019; Uyun et al., 2024). The cluster underscores the connection between local wisdom and the holistic development of students, particularly in forming ethical and culturally grounded individuals.

2. *Cluster 2 (Green): Effectiveness and Learning Evaluation*

This cluster includes terms such as "effectiveness," "assessment," "textbook," and "thematic learning." It highlights research focusing on the practical aspects of integrating local wisdom into educational settings. Specifically, these studies evaluate the effectiveness of local wisdom-based curricula, teaching methods, and educational materials, such as textbooks. The frequent appearance of "assessment" and "evaluation" suggests an interest in quantifying the impact of local wisdom on learning outcomes, ensuring that these culturally grounded approaches are both effective and measurable.

3. *Cluster 3 (Yellow): Learning Media and Development*

Keywords like "learning media," "development," and "learning module" dominate this cluster. The focus is on creating and improving educational tools incorporating local wisdom, mainly through various learning media. This cluster likely represents studies developing modules, media, and resources to facilitate the integration of local wisdom into classrooms. These tools make local wisdom more accessible to educators and students, enabling its practical application within educational frameworks.

4. *Cluster 4 (Red): Technology in Education (Augmented Reality and Mobile Learning)*

This cluster is characterized by keywords such as "augmented reality," "android," "mobile learning," and "mathematical representation." It represents a growing trend of incorporating technology into the teaching and learning of local wisdom. Researchers in this cluster are exploring innovative methods, such as mobile applications and augmented reality, to bring local wisdom to life in digital learning environments. This intersection of traditional knowledge and modern technology shows a push toward making local wisdom relevant and engaging for today's tech-savvy students.

5. *Cluster 5 (Blue): Culture, Media, and Learning*

This cluster connects keywords like "culture," "learning," and "media." It reflects a broader theme of studying how cultural aspects of local wisdom are disseminated and learned, possibly through various media channels. The focus here is on the cultural transmission of knowledge and the role of media in preserving and teaching local wisdom. This cluster suggests that research often looks at the role of both traditional and modern media in fostering learning environments that support cultural identity and heritage.

6. *Cluster 6 (Orange): E-Module and Scopus*

The "E-module" keyword, linked with "Scopus," suggests a niche focus on developing electronic modules based on local wisdom, possibly in response to academic output measured within Scopus-indexed publications. This reflects the scholarly engagement with designing digital learning tools to incorporate local wisdom and the importance of publishing these innovations in high-impact, widely recognized academic journals.

## **Future Research Recommendations**

Based on the findings and analysis of this bibliometric study, several areas emerge as potential directions for future research in integrating local wisdom into learning in schools. Firstly, there is a significant need for international comparative studies on integrating local wisdom in education. Since the current research is heavily concentrated in Indonesia with minimal contributions from other countries, conducting cross-cultural studies would provide a broader understanding of how different educational systems value and incorporate local wisdom. Such research can uncover unique approaches, challenges, and best practices from various cultural contexts, enriching the global discourse on culturally responsive education and potentially leading to more effective strategies worldwide.

Future research should investigate the impact of technology on preserving and teaching local wisdom. The co-occurrence keyword analysis highlights a growing interest in utilizing advanced technologies such as augmented reality, mobile learning, and e-modules in educational settings. Assessing how these technologies enhance learning outcomes, student engagement, and the preservation of indigenous knowledge is essential. Studies could evaluate user experiences and the scalability of these technological interventions across diverse educational contexts, determining their effectiveness in making local wisdom more accessible and engaging for today's digital-native students.

There is a need to assess the educational outcomes of local wisdom-based learning. While existing studies focus on developing and implementing curricula and educational tools incorporating local wisdom, empirical research assessing their long-term effectiveness is lacking. Future studies could conduct longitudinal evaluations of how integrating local wisdom into school curricula impacts students' character development, academic achievement, and cultural preservation. Such research would provide valuable insights into the tangible benefits of local wisdom-based education, informing educators and policymakers about its role in fostering well-rounded and culturally competent individuals.

## **CONCLUSION**

This bibliometric analysis provides a comprehensive overview of the research landscape on integrating local wisdom into school learning over the past decade, revealing significant growth in scholarly interest with an annual publication growth rate of 28.21%, indicating an emerging and dynamic field. Indonesia stands out as the most prolific contributor in both the number of publications and citations, totaling over 130 publications and 632 citations, underscoring the country's strong commitment to incorporating local wisdom into its educational system; this is further reinforced by the most productive author, H. Kuswanto, and the most cited document by Hidayati et al. both hailing from Indonesia. The research is divided into six clusters based on co-occurrence analysis: Character Education and Student Development; Effectiveness and Learning Evaluation; Learning Media and Development; Technology in Education (Augmented Reality and Mobile Learning); Culture, Media, and Learning; and E-Module and Scopus. Key themes include character education, the development of learning media, and the innovative use of technology—such as mobile learning and augmented reality—to facilitate the integration of local wisdom in educational settings. While the collaborative nature of research within Indonesia is evident from the high average of co-authors per document, international collaborations remain limited. The analysis highlights the critical role of local wisdom in enhancing educational practices by promoting cultural preservation, moral development, and student engagement; however, the concentration of research efforts within Indonesia points to significant opportunities for broader international engagement. Expanding research to include international comparative studies could provide valuable insights into how local wisdom can be integrated into different educational contexts. Furthermore, investigating the impact of advanced technologies and assessing the long-term outcomes of local wisdom-based learning can contribute to developing more effective and culturally responsive educational strategies globally. By pursuing these



avenues, future research can enrich the global discourse on education, support the preservation of cultural heritage, and foster the development of culturally competent and socially responsible individuals worldwide.

### **AUTHOR'S NOTE**

The author declares that there is no conflict of interest regarding the publication of this article and confirms that the data and content are free from plagiarism.

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