
EMERGING TRENDS IN THE DEVELOPMENT OF LOCAL WISDOM-ORIENTED TEACHING MATERIALS FOR CHARACTER EDUCATION IN ELEMENTARY SCHOOLS: A SYSTEMATIC REVIEW (2015–2025)

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Abstract

The advancement of education in the digital era requires learning innovations that not only focus on cognitive development but are also rooted in cultural and moral values. Integrating local wisdom into instructional materials serves as a strategic effort to strengthen students' character while preserving national cultural identity. This study aims to map research trends, analyze the contribution of local wisdom-based instructional materials to character education, and identify research gaps within studies published from 2015 to 2025. The research employed a *Systematic Literature Review (SLR)* guided by the PRISMA 2020 framework and supported by bibliometric analysis using *VOSviewer*. Data were obtained from 991 articles indexed in *Google Scholar* and *Scopus*, from which 29 met the inclusion criteria for further analysis. The findings reveal a significant increase in research publications over the past decade with two main orientations: the integration of cultural values to strengthen character education and the development of innovative learning media. The media developed include educational comics, storybooks, *pop-up books*, *e-modules*, and interactive multimedia designed to cultivate responsibility, religiosity, cooperation, and appreciation for local culture. However, limitations remain in the diversity of cultural contexts, long-term effectiveness testing, and the digitalization of learning media. Overall, local wisdom-based instructional materials play a crucial role not only in cultural preservation but also in holistic character development. Future studies should strengthen digital integration, broaden cross-cultural applications, and conduct longitudinal evaluations to support the implementation of the *Merdeka Curriculum* and the *Profil Pelajar Pancasila*.

Keywords: Character education; Elementary School; Learning Material; Local Wisdom

Abstrak

Perkembangan pendidikan di era digital menuntut inovasi pembelajaran yang tidak hanya berorientasi pada aspek kognitif, tetapi juga berakar pada nilai budaya dan moral. Integrasi kearifan lokal dalam bahan ajar menjadi langkah strategis untuk memperkuat karakter siswa sekaligus melestarikan identitas budaya bangsa. Penelitian ini bertujuan untuk memetakan tren penelitian, menganalisis kontribusi bahan ajar berbasis kearifan lokal terhadap pendidikan karakter, serta mengidentifikasi kesenjangan penelitian pada rentang 2015–2025. Metode yang digunakan adalah *Systematic Literature Review (SLR)* dengan mengacu pada pedoman PRISMA 2020 serta analisis bibliometrik menggunakan perangkat lunak *VOSviewer*. Data diperoleh dari 991 artikel yang bersumber dari *Google Scholar* dan *Scopus*, kemudian diseleksi hingga tersisa 29 artikel yang memenuhi kriteria inklusi untuk dianalisis lebih lanjut. Hasil kajian menunjukkan peningkatan publikasi signifikan dalam satu dekade terakhir dengan dua orientasi utama, yaitu penguatan karakter melalui nilai-nilai budaya lokal dan pengembangan media pembelajaran yang inovatif. Media yang digunakan meliputi komik, buku cerita, *pop-up book*, *e-modul*, dan multimedia interaktif yang menanamkan nilai tanggung jawab, religiusitas, gotong royong, serta cinta budaya. Namun, masih ditemukan keterbatasan dalam cakupan konteks budaya, uji efektivitas jangka panjang, dan digitalisasi media pembelajaran. Secara keseluruhan, bahan ajar berbasis kearifan lokal berperan penting tidak hanya dalam pelestarian budaya, tetapi juga dalam pembentukan karakter peserta didik. Riset selanjutnya perlu memperkuat integrasi teknologi digital, memperluas konteks budaya, dan melaksanakan evaluasi longitudinal untuk mendukung implementasi *Kurikulum Merdeka* dan *Profil Pelajar Pancasila*.

Kata Kunci: Kearifan Lokal; Media Pembelajaran; Pendidikan Karakter; Sekolah Dasar

Received : 2025-11-04

Approved : 2026-01-17

Revised : 2026-01-07

Published : 2026-01-31



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Introduction

Character education holds a fundamental position within the national education system, as the younger generation today faces the dynamics of globalization and the Fourth Industrial Revolution, which demand multidimensional competencies—not only cognitive proficiency but also strong affective abilities. The massive transformations occurring across technological, economic, social, and cultural sectors as implications of this revolution have driven the need for curriculum reform and innovation in teaching methods (Oliviera & Souza, 2022). Elementary school is viewed as a strategic stage in shaping students' character because, during this developmental phase, children experience the formation of fundamental morals that serve as the foundation of their future behavior (Bosco et al., 2021). Values such as religiosity, honesty, discipline, responsibility, and tolerance are essential to be instilled from an early age so that they become internalized in everyday life and serve as the basis for building a solid moral identity (Atin & Maemonah, 2022). When character education is delivered normatively without being linked to students' real-life experiences, the process risks producing mere memorization of moral concepts without practical behavioral application (Rahmawati, 2018). Therefore, teachers are expected to design authentic and contextual learning processes by creating situations that enable students to experience character values firsthand (Syukri, 2019).

A nation that fails to equip its young generation with adaptive character competencies aligned with technological advancement risks facing global disparities and falling behind in international competition (Putnarubun & Ninia, 2022). In this context, the teacher's role extends beyond that of a knowledge transmitter to that of a facilitator who integrates digital literacy, 21st-century skills, and character education into teaching materials and learning media relevant to contemporary demands (Desrani, 2025). Local wisdom, as a manifestation of a nation's cultural heritage, embodies noble values that can serve as the foundation for character education, as it contains norms, ethics, and social practices that have been tested and sustained within communities (Mazid et al., 2020). Integrating local cultural values into learning materials fosters contextual learning that is closely connected to students' real-life experiences while reinforcing national identity rooted in regional wisdom (Santoso & Wuryandani, 2020). Implementation education based on local wisdom has been proven to enhance students' active participation, strengthen social awareness, and foster concern for their surrounding environment (Lubis & Harahap, 2025). Through the integration of local wisdom-based teaching materials, teachers can instill character values contextually through folktales, traditional games, and community social practices (Novianti et al., 2015). Thus, this approach is not only pedagogically relevant but also plays a strategic role in strengthening national identity and maintaining unity amid diversity (Mislikhah, 2020).

Despite these advances, field realities indicate that most elementary school teachers still rely on conventional teaching materials, primarily standardized national textbooks, which are general in nature and fail to accommodate local cultural contexts (Fatwa et al., 2025). This condition leads to less meaningful learning experiences because instructional content is not connected to students' real-life contexts and environments. Several studies have shown that students demonstrate higher motivation when learning materials are associated with regional cultural elements such as local legends, traditional games, and community social practices (Idamatusilmi & Munawaroh, 2025). Learning based on local wisdom has also been proven to

enhance students' learning interest and strengthen their attachment to their regional cultural identity (Andira & Akbar, 2025). However, limitations in teachers' ability to develop innovative teaching materials, coupled with insufficient facilities and resources, have resulted in low levels of implementation of this model (Hidayati et al., 2020). Consequently, a gap persists between the policy of strengthening character education and its classroom implementation, exacerbated by teachers' tendency to continue using traditional and less innovative teaching methods (Nisa et al., 2024)

To trace the current research directions, a bibliometric analysis was conducted using the VOSviewer software on scientific publications within the 2015–2025 timeframe. The mapping results reveal two main clusters: the red cluster, centered around the terms education, community, approach, and attitude, representing research focused on character education and social approaches; and the green cluster, highlighting the terms local wisdom, students, schools, responsibility, materials, and development, which illustrate research orientation toward the development of local wisdom-based teaching materials. This visualization indicates a clear distinction between theoretical and practical domains of research, thereby necessitating a comprehensive synthesis to integrate. These findings are consistent with other bibliometric analyses that report a significant increase in global publications on local wisdom-based education over the past five years. A similar trend has also been identified in the *International Journal of Learning, Teaching and Educational Research*, which recorded a sharp rise in studies focusing on the integration of local wisdom into school curricula (IJLTER, 2023). Therefore, the bibliometric analysis not only confirms the growing academic attention toward this topic but also reveals a conceptual gap between the social cluster and the teaching material development cluster—one that needs to be bridged through a systematic literature review.

Although publications on local wisdom-based teaching materials have shown significant growth in recent years, most studies remain fragmented, focusing primarily on module design without assessing their long-term effectiveness (Fatwa et al., 2025). Several other studies highlight the importance of internalizing cultural values in learning activities; however, these efforts have not been accompanied by comprehensive evaluations of their influence on students' character formation (Utami & Bektiningsih, 2022). Furthermore, the development of digital teaching material models incorporating local wisdom remains relatively limited, despite the urgent need for the integration of educational technology to address the challenges of the Fourth Industrial Revolution (N. R. Sari et al., 2016). In response to these issues, this study employs a Systematic Literature Review (SLR) approach covering the 2015–2025 period to map the research trends in the development of local wisdom-based teaching materials in elementary schools, identify their contribution to character education, examine the development models utilized, and determine the existing research gaps. The novelty of this study lies in its specific focus on the elementary education level, the integration of character education dimensions within the analysis, and the mapping that not only describes trends but also highlights development models and research gaps that have not been extensively explored in previous studies. Therefore, this review is expected to provide a more comprehensive overview of prior research directions and serve as a foundation for subsequent studies that are more innovative and applicable.

Research Methods

This study adopts an integrated research approach that combines bibliometric analysis and a Systematic Literature Review (SLR) to provide a comprehensive understanding of research trends, thematic orientations, and analytical depth related to the development of local

wisdom-based teaching materials in elementary education. By integrating quantitative mapping of scientific publications with qualitative synthesis, this approach enables a more holistic interpretation of the knowledge structure and research evolution within the field, particularly in relation to character education and learning media (Donthu et al., 2021). The SLR process was conducted in accordance with the PRISMA 2020 guidelines, which emphasize transparency, methodological rigor, and traceability throughout the literature selection process. As highlighted by Page et al. (2021), PRISMA 2020 offers a standardized framework that enhances the reliability of systematic reviews by clearly documenting each stage of identification, screening, eligibility assessment, and final inclusion, thereby reducing potential bias and improving reproducibility.

The literature data were retrieved from Google Scholar and Scopus, covering publications from 2015 to 2025 in order to capture recent and relevant developments in local wisdom-based education. These databases were selected due to their broad coverage of peer-reviewed educational research, and the search process employed the keywords “local wisdom,” “student character,” and “learning media,” which are widely used in studies examining culturally responsive pedagogy and instructional design. All retrieved records were initially extracted using the Publish or Perish software to obtain essential metadata, including article titles, authors, publication years, journal sources, and keywords. The screening and elimination of articles based on predefined inclusion and exclusion criteria were then conducted using Microsoft Excel, while Mendeley was utilized to manage references and prevent duplication, thereby ensuring accuracy and efficiency in the review process.

Following the screening stage, a bibliometric analysis was performed using VOSviewer to visualize publication patterns, keyword co-occurrence networks, and thematic clusters emerging within the field. This mapping process, as explained by van Eck & Waltman (2010), facilitates the identification of dominant and emerging research themes, allowing researchers to better understand intellectual linkages and research concentrations across publications. The results of the bibliometric mapping were subsequently used as the foundation for an in-depth systematic review, focusing on the analysis of research contributions, instructional models, and identified research gaps in the context of local wisdom-based character education at the elementary school level. Through this integrated analytical process, the study not only reveals relational patterns among research topics but also strengthens the interpretative depth of the findings by situating them within existing empirical and theoretical discussions (Donthu et al., 2021).

The entire article selection process is summarized in the PRISMA 2020 flow diagram presented in Figure 1, which provides a concise overview of the number of records at each stage of the review process. At the identification stage, a total of 991 articles were retrieved, consisting of 982 articles from Google Scholar and 9 articles from Scopus, with no duplicate records identified. During the initial screening, 135 articles were excluded due to the absence of titles or abstracts, resulting in 856 articles being retained for further eligibility assessment, as documented in the PRISMA framework (Page et al., 2021). The PRISMA diagram is presented in Figure 1.

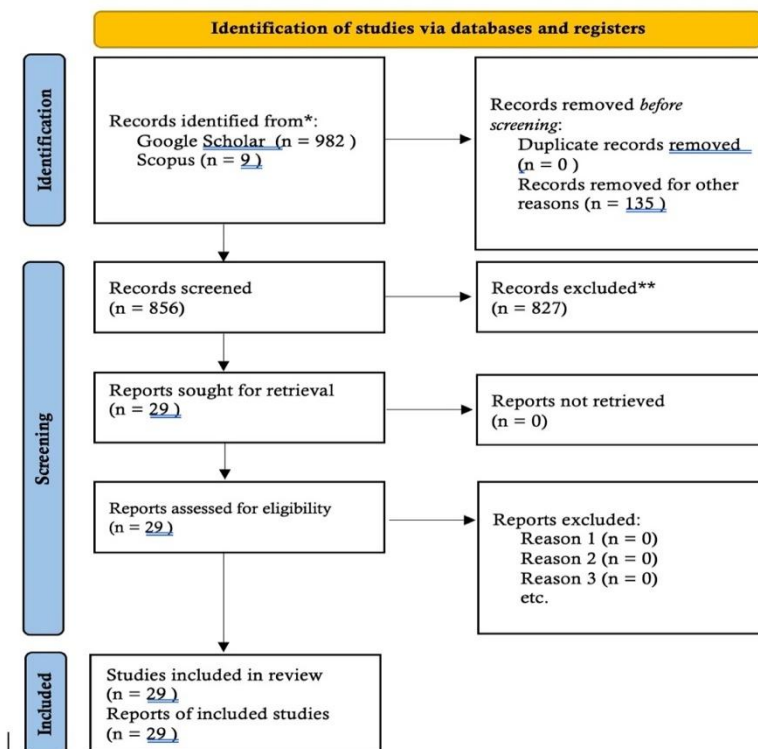


Figure 1. PRISMA Flow Diagram

At the identification stage, a total of 991 articles were obtained, consisting of 982 articles from Google Scholar and 9 articles from Scopus. After checking for duplication based on titles and authors, no duplicate articles were found. Subsequently, during the initial screening stage, 135 articles from Google Scholar and 0 articles from Scopus were eliminated due to the absence of titles or abstracts, leaving 856 articles. In the advanced selection stage, the remaining articles were screened based on the inclusion and exclusion criteria, which are presented in Table 1.

Table 1. Inclusion and Exclusion Criteria

Table 1. Inclusion and Exclusion Criteria	
Eksklusi Criteria	<ol style="list-style-type: none"> Does not discuss elementary school teaching materials (e.g., studies focusing on junior high school, senior high school, or general contexts). Focuses on local wisdom in tourism or economics rather than in the educational context. Articles classified as opinion papers, editorials, or short reviews without empirical research data. Full-text version is not available. Published outside the 2015–2025 period. Duplicate articles originating from the same or different databases.
Inklusi Criteria	<ol style="list-style-type: none"> Discusses local wisdom in the development of teaching materials for elementary schools. Relates to the strengthening of students’ character education. Empirical research articles employing qualitative, quantitative, research and development (R&D), or mixed-method approaches. Published between 2015 and 2025. Written in either Indonesian or English. Full-text available in PDF or HTML format.

Based on these criteria, the researchers selected 827 articles, consisting of 821 from Google Scholar and 6 from Scopus. After the complete screening process, 29 articles met the inclusion criteria and were subjected to further analysis. The selected articles were then organized into a table containing the authors' names, publication years, journal titles, article titles, and key research findings. Subsequently, the researchers reviewed and analyzed each article in depth, focusing primarily on the research results presented in the discussion and conclusion sections. Finally, a comparative analysis was conducted to synthesize the findings and draw overarching conclusions.

Results and Discussion

The findings from the analyzed articles reveal the researchers' strong commitment to developing local wisdom-based learning media as a means of fostering character education among elementary school students. Through various approaches—ranging from educational comics, animated videos, and illustrated storybooks to interactive multimedia—these studies focus on integrating local cultural values into the learning process. The aim is not only to enhance academic understanding but also to instill character values such as responsibility, cooperation, tolerance, and appreciation of one's own culture. These findings underscore the importance of contextual and meaningful learning, which connects students more deeply to their social and cultural environment. Such an approach is expected to serve as a strategic contribution to strengthening character education that aligns with local contexts. The results of the article analysis are presented in Table 2.

Table 2. Results of Article Analysis

No	Author(s)	Learning Media	Character Values
1	(Adnyana et al., 2024)	Teaching Material (Self-Instruction)	Thinking, saying, and doing good Logical thinking, critical, hard work, curiosity, independence, honesty, democracy, self-confidence
2	(Suzana et al., 2021)	Mathematics Teaching Material (Thematic Module)	Tolerance, nationalism, social care, peace-loving, communicative
3	(Murti et al., 2020)	Educational Comic	Religious, nationalism, integrity, independence
4	(P. P. Sari et al., 2023)	Children's Print Comic "Komik Anak Cinta Budaya"	Caring, responsibility
5	(Lestariningsih & Suardiman, 2017)	Thematic-Integrative Teaching Material Subtheme 'My Living Environment'	Honesty, hard work, peace-loving, discipline, independence, religiosity
6	(Kusni et al., 2021)	Illustrated Storybook (E-Book)	Empathy (Siri' Na Pacce), heroism, discipline, love for the environment, creativity, social awareness
7	(Rabiah, 2018)	Teaching Material 'Pappilajaran Basa Mangkasarak'	Tolerance, religiosity, honesty, discipline, diligence
8	(Purwani & Mustikasari, 2024)	Local Wisdom-Based Fairy Tale (Javanese Language)	

No	Author(s)	Learning Media	Character Values
9	(Fatmawati & Afryaningsih, 2025)	Illustrated Storybook	Love for local culture, appreciation, responsibility
10	(Saputra et al., 2022)	Illustrated Storybook	Responsibility, reading interest
11	(Suwarti et al., 2020)	Local-Based Comic 'Totok Kerot' (Kediri)	Understanding of moral messages in folklore
12	(Lukman et al., 2019)	Local Animation Video (Theme: Batanghari River and Natural Disasters)	Environmental realism, educational, learning spirit, responsibility
13	(Nurlailah et al., 2024)	Interactive Multimedia (Video, Worksheets, Leaflets, Monopoly, Posters)	6C: Critical Thinking, Communication, Collaboration, Creativity, Character, Citizenship
14	(Siregar & Bahri, 2022)	Illustrated Storybook Theme 7	Patriotism, tolerance, appreciation of diversity
15	(Zulkhi et al., 2023)	Interactive E-Module Based on Local Wisdom (Balumbo Biduk) using 3D Pageflip	Local cultural values, critical thinking, learning interest, cooperation
16	(Fatmawati et al., 2024)	Local Interactive Multimedia (Purworejo, Kebumen, Wonosobo)	Pancasila Student Profile Characters: Noble morals, cooperation, independence, critical thinking
17	(Azizah, 2019)	Local Wisdom-Based Learning Video (Art and Culture Subject)	Creativity, responsibility, openness, politeness
18	(Damayanty et al., 2024)	Local Wisdom-Based Magazine 'Cemara' (Purworejo)	Independence, critical thinking, creativity, collaboration, cooperation
19	(Nurika et al., 2022)	Big Book Based on Lombok Local Folklore	Reading interest, responsibility
20	(Paramita et al., 2025)	Web-Based Interactive Learning Media using Genially	Critical thinking, communication, collaboration, creativity
21	(Puspita & Setyaningtyas, 2022)	Local Wisdom-Based Pop-Up Book (Trenggalek Regency)	Cooperation
22	(Daryanti et al., 2022)	Local Wisdom-Based Caricature Media (Kediri)	Local character traits, love for the region, responsibility, interest
23	(Rachmawati et al., 2022)	Interactive Multimedia (Android and Computer-Based) for Science Lessons	Love for local culture, nationalism, curiosity
24	(Kasmawati et al., 2024)	Animation Video Based on Tolaki Culture for Civics Education (Grade V)	Moral, socio-cultural awareness, tolerance
25	(Haerunnisa et al., 2020)	Local Wisdom-Based Textbook (Kampung Nambangan)	Religiosity, independence, cooperation
26	(Adiputra & Suwita, 2024)	Booklet	Love for local culture
27	(Avipa et al., 2023)	Flashcards	Love for local wisdom
28	(Fadhillah, 2024)	Big Book	Reading interest
29	(Cahyani et al., 2024)	Quartet Cards	Love for culture and diversity

Strengthening character education through a local wisdom-based approach is a strategic and contextually grounded effort within Indonesia's socio-cultural landscape. In a multicultural society, local values function not only as markers of identity but also as meaningful learning

resources that connect academic content with students lived cultural experiences. Accordingly, learning media that integrate local wisdom can bridge instructional goals and character formation, responding to the need for education that addresses cognitive achievement as well as affective and social development. The evidence indicates that local wisdom-based learning media have been widely adopted to support character building among elementary school students, with diverse formats developed across studies. These include illustrated storybooks (Fatmawati & Afryaningsih, 2025), local-wisdom literacy media to foster responsibility and reading interest (Saputra et al., 2022), thematic local storybooks emphasizing tolerance and patriotism (Siregar & Bahri, 2022), moral- and social-value comics (Murti et al., 2020), culturally inspired children's print comics to cultivate religiosity and diligence (Sari et al., 2023), and caricature-based media highlighting local figures to strengthen responsibility and regional pride (Daryanti et al., 2022). Audiovisual innovations further demonstrate promise, including locally themed animated videos for science learning (Lukman et al., 2019), culture-based civic education videos (Kasmawati et al., 2024), and art-and-culture instructional videos designed to reinforce Pancasila values (Azizah, 2019). More interactive digital approaches are also evident, such as e-modules (Zulkhi et al., 2023), multimedia strategies oriented toward 6C competencies (Nurlailah et al., 2024), and web-based learning media using Genially (Paramita et al., 2025). Across these media, commonly targeted character values include responsibility, cooperation, religiosity, tolerance, honesty, and appreciation of local culture, alongside distinctive regional moral concepts such as *Siri' Na Pacce* integrated into Makassar language teaching materials (Rabiah, 2018). Embedding such values tends to enhance contextual relevance and meaning-making in learning. However, the current body of work is still dominated by early-stage development, limited validation, or non-implementation designs. Several studies rely on literature-based or content-analytic approaches without classroom trials (Adnyana et al., 2024; Purwani & Mustikasari, 2024), while others have not yet examined the long-term effects of these media on sustained character development (Damayanty et al., 2024; Haerunnisa et al., 2020).

Mapping the Trends in the Development of Local Wisdom-Based Teaching Materials in Elementary Schools

In recent years, the development of local wisdom-based teaching materials has gained increasing attention in elementary education due to its relevance in strengthening character education while preserving regional cultural values amid globalization. To address Research Question 1 (RQ1), this study employed a combined bibliometric and Systematic Literature Review (SLR) analysis of 29 articles published between 2015 and 2025. Bibliometric mapping using VOSviewer was conducted to examine keyword interconnections, while trend analysis was used to identify patterns in research development over time, as illustrated in Figure 2.

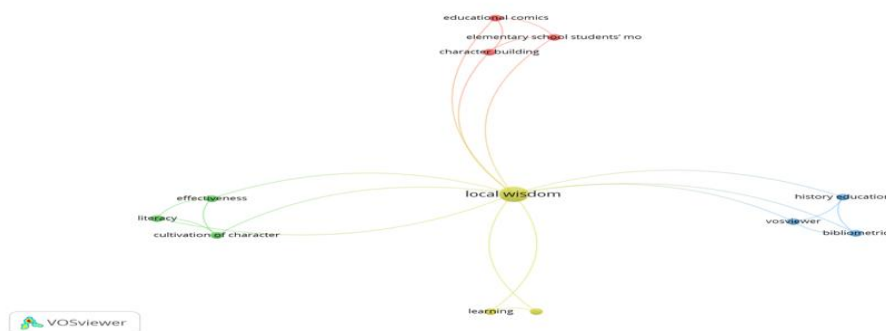


Figure 2. Bibliometric Visualization of the Development Trend of Local Wisdom-Based Teaching Materials

The VOSviewer visualization shows that the keyword *local wisdom* occupies a central position and is strongly associated with education, character building, learning media, and elementary school students. Three main clusters were identified: a red cluster emphasizing character education and social values, a green cluster focusing on the development of teaching materials and learning media based on local wisdom, and a blue cluster highlighting methodological studies such as history education and bibliometric analysis. This pattern indicates that research in this field has developed along two primary orientations, namely character formation through cultural content and innovation in learning media grounded in local values. The trend of publication distribution is illustrated in Figure 3.

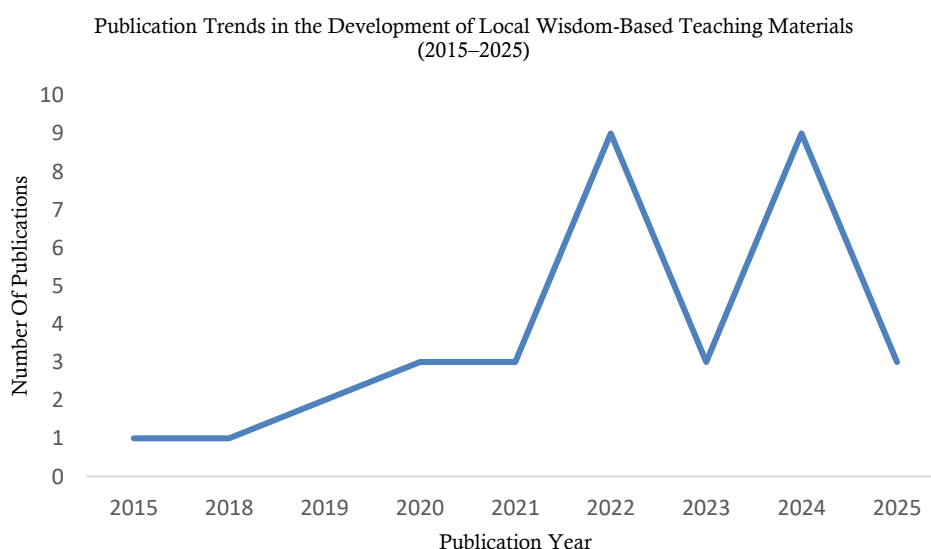


Figure 3. Publication Trends In The Development Of Local Wisdom

Publication trend analysis reveals a notable increase in research interest over the past decade, with a sharp rise beginning in 2019 and peaks occurring in 2022 and 2024. During the early period (2015–2018), studies were limited and mainly exploratory, focusing on integrating local cultural values into teaching materials, such as thematic materials based on Yogyakarta culture and Makassar language materials incorporating *Siri' Na Pacce*. Between 2019 and 2021, research expanded gradually, with a growing emphasis on visual learning media, including locally inspired animation videos and educational comics. The year 2022 marked the highest research productivity, characterized by diverse innovations in interactive multimedia, pop-up books, and caricature-based learning media rooted in regional cultures. This trend continued during 2023 and 2024, with an increasing focus on digital and interactive formats such as e-modules, children’s comics, and multimedia integrating Pancasila Student Profile values. Although the number of publications declined slightly in 2025, recent studies show a shift toward web-based learning media and practicality evaluation, reflecting adaptation to emerging educational technologies.

Overall, the findings indicate that research on local wisdom–based teaching materials in elementary education has evolved from predominantly text-based approaches toward digital and multimodal learning media that emphasize character values and cultural relevance. This evolution aligns with the implementation of the Merdeka Curriculum and the Pancasila Student Profile, positioning local wisdom not only as instructional content but also as a foundation for character development and national identity in a global context.

Contribution of Teaching Material Development to Character Education

The mapping of dominant character values emphasized in local wisdom-based teaching material development is summarized in Table 3, based on the analysis of 29 articles.

Table 3. Distribution of Character Values in the Development of Local Wisdom-Based Teaching Materials in Elementary Schools

No	Character Values	Percentage (%)
1	Responsibility	13.5
2	Religious	10.8
3	Mutual Cooperation (Gotong Royong)	9.5
4	Love for Local Culture	8.1
5	Discipline, Honesty	6.8
6	Creativity, Critical Thinking, Independence	5.4
7	Tolerance, Patriotism, Reading Habit, Hard Work	4.1
8	Integrity, Peacefulness, Social Care, Critical Mindset, Global Diversity	2.7

Overall, responsibility (13.5%), religiosity (10.8%), and mutual cooperation (9.5%) emerge as the three most frequently highlighted values. Other values also appear consistently across studies, including love for local culture (8.1%), discipline and honesty (each 6.8%), as well as creativity, critical thinking, and independence (each 5.4%). This distribution suggests that local wisdom-based materials are widely viewed as effective for nurturing students' moral-spiritual dimensions while reinforcing sociocultural competencies such as cooperation, tolerance, and cultural appreciation that support national identity formation.

The media formats used in the reviewed studies further indicate the contextual role of culture in character education. Print-based media (e.g., pop-up books and big books) tend to convey values through narrative and cultural representation (Puspita & Setyaningtyas, 2022; Nurika et al., 2022), whereas digital media (e.g., interactive e-modules and web-based videos) are more strongly linked to digital literacy and responsibility through project-oriented activities (Zulkihi et al., 2023; Paramita et al., 2025). These patterns align with Alwanda (2025), who argues that contextual and project-based learning is particularly relevant for fostering creativity, responsibility, and active participation in 21st-century classrooms. In sum, the bibliometric and SLR findings confirm that local wisdom-based teaching material development contributes substantially to elementary students' character education by integrating regional cultural values that support academic learning and the internalization of moral, social, and spiritual competencies, in line with the Merdeka Curriculum and the Pancasila Student Profile agenda.

Learning Media Developed

A review of studies published between 2015 and 2025 shows that research on local wisdom-based teaching materials in elementary schools extends beyond the integration of cultural values to include continuous innovation in learning media. As illustrated in Figure 4, the developed media can be broadly classified into three categories: print-based media, interactive digital media, and contextual media grounded in local cultural activities. This classification reflects the evolving strategies used by researchers to deliver character values in forms that are increasingly relevant to students' learning contexts. The data on learning media are presented in Figure 4.

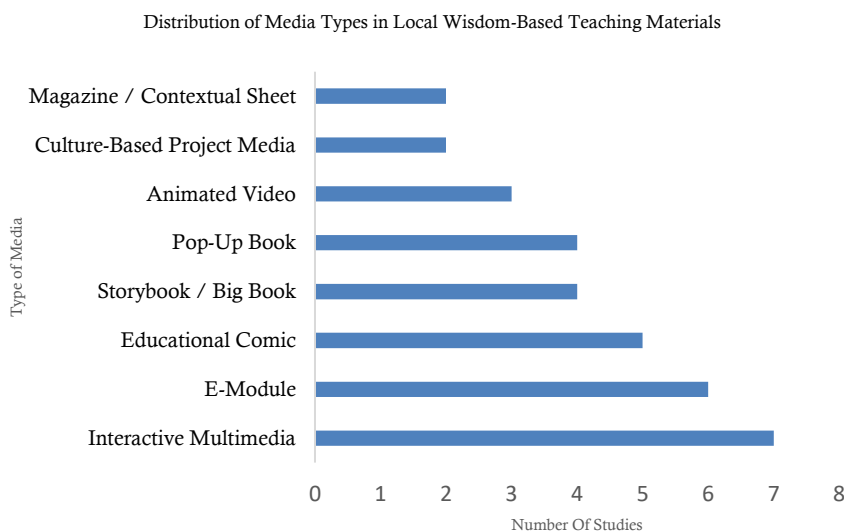


Figure 4. Types of Learning Media Developed in Studies on Local Wisdom-Based Teaching Materials in Elementary Schools

During the early period (2015–2020), print-based media such as storybooks, educational comics, and pop-up books were dominant due to their effectiveness in combining narrative and visual elements closely aligned with students’ everyday experiences. Studies demonstrated that culturally embedded print media were effective in fostering responsibility, patriotism, morality, and social awareness among elementary students. These findings indicate that narrative-based cultural representation plays a crucial role in the early stage of character internalization. Alongside technological advancement and the implementation of the *Merdeka Belajar* policy, research attention has shifted markedly toward interactive digital media, including e-modules, multimedia learning applications, instructional videos, and web-based platforms. These media emphasize student engagement, autonomy, and digital literacy while embedding local wisdom as contextual content. Digital media have been shown to more effectively promote character values such as religiosity, collaboration, independence, and nationalism through interactive and project-oriented learning experiences, suggesting a stronger alignment with 21st-century learning demands. More recently, an emerging trend highlights the use of contextual media based on direct engagement with local cultural practices, where students participate in community-based or project-based activities rooted in regional traditions. This approach strengthens the authenticity of character education by linking learning outcomes with real-life cultural experiences, thereby enhancing students’ responsibility, creativity, and collaboration. Overall, the evolution from print-based to digital and contextual learning media indicates that local wisdom-based teaching materials function not only as instruments of cultural preservation but also as pedagogical innovations that reinforce character education and cultural literacy in the digital era.

Analysis of Weaknesses and Research Gaps in the Development of Local Wisdom-Based Learning Media in Elementary Schools

A review of 29 studies published between 2015 and 2025 indicates that, despite the increasing growth of local wisdom-based learning media in elementary education, several substantive research gaps persist. Most studies remain concentrated on product design and expert validation, with limited progression to classroom implementation and long-term effectiveness testing; consequently, robust evidence of sustained impacts on character formation and learning outcomes is still scarce. In addition, many studies are confined to a single local

context without cross-regional comparison, which limits generalizability in Indonesia's multicultural setting. From an innovation standpoint, the continued dominance of print-based products suggests that digitalization and scalable technology integration are not yet systematically optimized, while digital products that do exist are often evaluated only through validation rather than field-based impact measurement. These weaknesses are synthesized in the visual research gap map presented in **Figure 5**, which summarizes the relative strength and limitation of key research aspects across the reviewed studies.

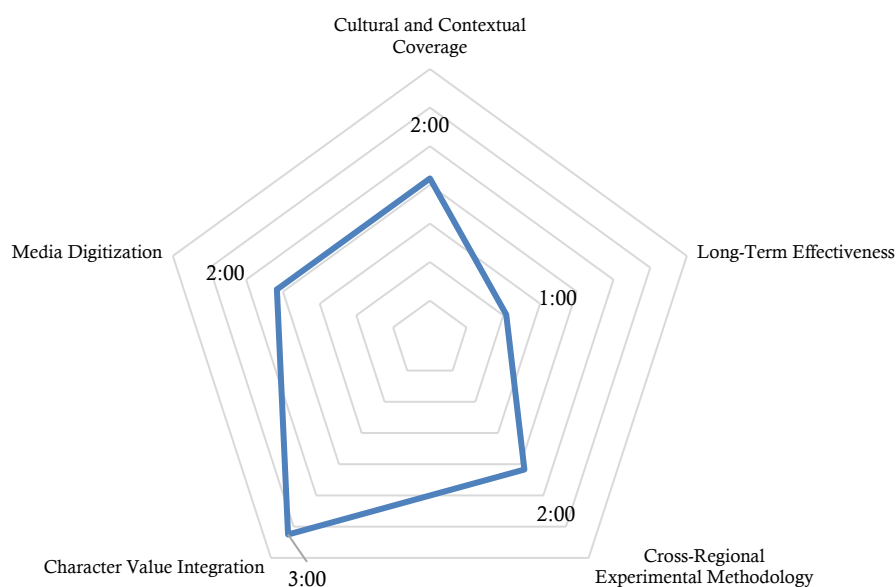


Figure 5. Visual Research Gap Map in the Development of Local Wisdom-Based Learning Media in Elementary Schools

As illustrated in Figure 5, long-term effectiveness testing constitutes the most prominent weakness, followed by limited cultural coverage, insufficient media digitalization, and the lack of cross-regional experimental designs. Although the integration of character values into cultural content shows moderate progress, this advancement is uneven and rarely supported by rigorous empirical evaluation. Overall, the pattern suggests that the literature is currently stronger at the conceptual and product development stages than at sustained implementation and impact assessment. Therefore, future research should prioritize longitudinal and experimental designs, expand cross-cultural and cross-regional testing, and leverage technology-enhanced platforms to improve scalability and measurable outcomes, thereby strengthening the contribution of local wisdom-based innovations to character education in alignment with the Merdeka Curriculum and the Pancasila Student Profile.

Conclusion

This study concludes that research on local wisdom-based teaching materials in elementary schools (2015–2025) has grown markedly, both in publication output and in the range of learning media developed. The combined bibliometric and SLR findings indicate that the literature is primarily oriented toward integrating local cultural values to strengthen character education and designing contextual learning media that connect instruction with students' everyday realities. Across the reviewed studies, local wisdom-based teaching

materials consistently support the internalization of key character values—particularly responsibility, religiosity, cooperation, and cultural appreciation—through both print and digital formats, including comics, illustrated storybooks, pop-up books, e-modules, and interactive multimedia. Nevertheless, the evidence remains limited by the predominance of development-stage and validation-focused research, the lack of longitudinal effectiveness testing, and the restricted cultural scope of many studies to single-region contexts. Future research should therefore employ more rigorous empirical designs, expand cross-regional and cross-cultural implementation, and strengthen technology-enhanced development to generate scalable and measurable impacts on character formation. Overall, advancing these directions will enhance the contribution of local wisdom-based teaching materials as evidence-informed innovations that support the sustainable implementation of the Merdeka Curriculum and the Pancasila Student Profile in elementary education.

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