

Bibliometric Analysis of Nusantara Cultural Research in Elementary Schools in Indonesia

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Abstract: The main problem in basic education in Indonesia is the decline in understanding and appreciation of the culture of the archipelago. The tide of globalization, technological developments, and the dominance of foreign popular culture have caused local values to be increasingly marginalized, resulting in students having little knowledge of their national identity. This study aims to analyze trends in research on the culture of the archipelago in Indonesian elementary schools during the period 2020–2025, focusing on dominant themes, keyword connections, and their developmental dynamics. The analysis is expected to identify research gaps and provide recommendations for study directions relevant to culture-based education. The research method uses bibliometric analysis with the help of VOSviewer software. The data is visualized through three approaches, namely network visualization to map the connections between keywords, overlay visualization to see time trends, and density visualization to measure the intensity of research themes. The results show that the main topics include character education, cultural values, local wisdom, strengthening character, and revolution 4. The keyword “cultural” plays an important role, while “local wisdom” and “revolution 4” are increasingly dominant. This study provides a comprehensive map of the direction of research on the culture of the Indonesian archipelago and emphasizes the importance of integrating cultural values into the elementary school curriculum.

INTRODUCTION

The Nusantara culture plays a central role in shaping the identity, values, and norms of Indonesian society (Malinda & Najicha, 2023; G. A. Putra & Widuri, 2024). In the context of education, culture is not only viewed as a heritage that must be preserved but also as a source of values and inspiration in developing the character of the younger generation (Ali, 2022). Culture-based education allows the learning process to become more contextual and meaningful by linking knowledge to social realities and local wisdom. Through this approach, students can develop values such as patriotism, tolerance, mutual cooperation, and appreciation for national diversity (Muhammad & Ulfatun, 2022; Irawan & Rosyani, 2022).

Elementary school is a strategic phase for instilling cultural values from an early age (Novela et al., 2024). At this stage, students are in the process of forming their personalities and basic character; therefore, strengthening identity through culture-based education

becomes highly relevant (Annisa & Ulfatun N., 2021). The integration of Nusantara culture into the learning process can be realized through the use of local languages, the introduction of local traditions, and the application of noble values such as cooperation, politeness, and environmental awareness (Arisandhi et al., n.d.; Khabibullah et al., 2022). These efforts help students grow into individuals with strong character, national insight, and the ability to adapt to global developments (Kanhaya, 2025).

However, the challenges of globalization and the dominance of foreign popular culture often shift local cultural values away from educational spaces. This phenomenon has the potential to weaken national identity and diminish young people's appreciation of the nation's cultural heritage. Therefore, culture-based education in elementary schools needs to be revitalized as an effort to restore local wisdom values. Through an integrated and innovative curriculum, teachers can utilize Nusantara culture as a contextual, relevant, and engaging learning resource (Anatasya et al., 2024).

Previous studies have shown that implementing culture-based education can strengthen students' character, including cooperation, tolerance, and harmony with nature (Ramadhani, 2023). Nevertheless, most of these studies remain local in scope and have not yet depicted national research trends. Furthermore, the connection between Nusantara culture and current education policies, such as the Merdeka Curriculum, has rarely been explored in depth (Mubarok et al., 2021; Zaen et al., 2024).

To fill this gap, a bibliometric analysis is considered relevant to map the direction and development of research related to Nusantara culture in elementary schools. This approach enables researchers to trace topic trends, dominant keywords, and collaboration patterns among Indonesian researchers. Therefore, this study aims to analyze research trends on Nusantara culture within the context of elementary education in Indonesia in 2025. The results are expected to provide both theoretical and practical contributions to strengthening national identity and to serve as a foundation for formulating culture-based education policies in the global era.

METHOD

Research Design

This study employed a bibliometric approach with a descriptive quantitative design (Silveira et al., 2024). The main focus was to analyze the trends of scientific publications concerning humans and *Nusantara* culture within the context of elementary education in Indonesia in 2025. This approach was chosen because it enables researchers to map the development of research, identify dominant themes, and uncover research gaps through the analysis of publication networks and keywords.

Data Source

Data were obtained from scientific databases such as Crossref, which was selected because it includes both national and international literature. The inclusion criteria comprised journal articles, conference proceedings, and research reports published between 2020 and 2025, using the keywords “Nusantara human,” “Nusantara culture,”

“elementary education,” and “local wisdom.” Popular articles, news, and non-scientific publications were excluded from the dataset.

Data Collection Techniques

Data were collected by searching for articles using the predetermined keywords. The search results were then exported into standard formats (CSV/Excel) containing publication metadata such as title, author, year, keywords, journal, affiliation, and citation count. The next step involved data cleaning and refinement by removing duplicates, standardizing author and institutional names, and unifying keywords with similar meanings or different spellings.

Data Analysis

Data analysis was conducted in two stages. First, a descriptive quantitative analysis was performed to calculate the annual publication trends, author distribution, journals, and citation counts. Second, a bibliometric network analysis was carried out using VOSviewer software to visualize keyword mapping, author collaboration, and thematic research clusters. The results of these analyses were then interpreted to identify dominant research focuses and reveal existing research gaps.

RESULT AND DISCUSSION

The bibliometric analysis using VOSviewer software provides an overview of the emerging research trends. The network visualization of keywords illustrates a close interconnection between education, character strengthening, culture, and the Fourth Industrial Revolution (Industry 4.0). These findings indicate that education in Indonesia should be directed not only toward producing academically competent individuals but also toward developing strong character and cultural appreciation. Consequently, research on the synergy between education, culture, and local wisdom has become increasingly important for addressing global dynamics and preserving national identity. Figure 1 presents the network visualization map.

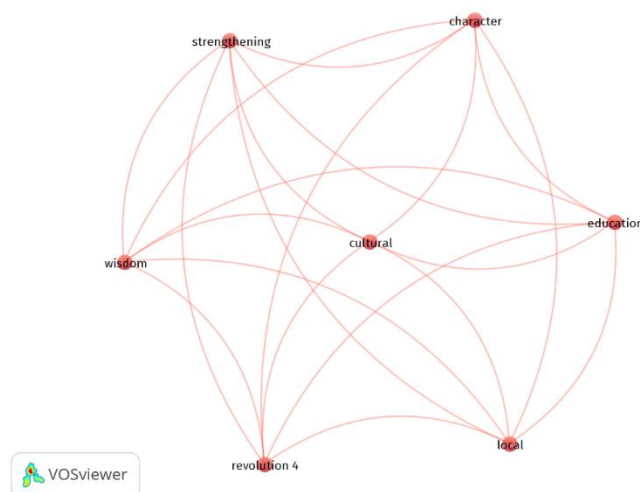


Figure 1. Network Visualization

The figure represents the keyword network visualization generated using VOSviewer software. Each circle or node on the map represents a keyword that appears in the research dataset, such as character, education, cultural, local, wisdom, strengthening, and revolution 4. The red lines connecting the nodes illustrate co-occurrence relationships among keywords within the same document. The map shows that education is closely linked to character strengthening, culture, and the challenges of Industry 4.0. Furthermore, the concept of local wisdom plays a vital role in building culture-based education and character development. Thus, the map confirms that the main issues in the analyzed studies revolve around the synergy among education, character strengthening, cultural values, local wisdom, and adaptation to the dynamics of the Fourth Industrial Revolution.

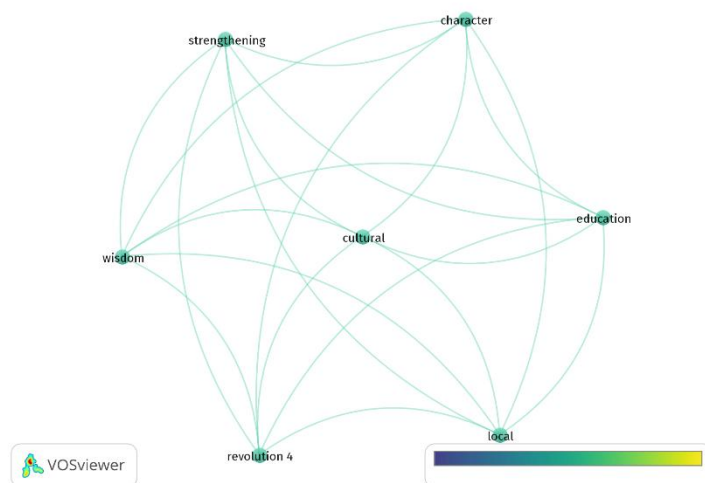


Figure 2. Overlay Visualization

Figure 2 presents the overlay visualization derived from the bibliometric analysis using VOSviewer. Unlike the regular network visualization, the overlay visualization adds temporal or intensity-related information indicated by the color scale (ranging from blue to yellow) displayed at the bottom. Each node represents a keyword, character, education, cultural, local, wisdom, strengthening, and revolution 4, and the connecting lines indicate co-occurrence relationships among them in the analyzed documents. The color of each node reflects the time or weight of its appearance: nodes shaded in blue represent earlier or less frequent keywords, whereas yellow nodes signify more recent or increasingly prominent ones. Overall, this visualization helps researchers understand the temporal evolution of research themes. For example, topics such as education and character strengthening may have been long-standing focuses, while revolution 4 and local wisdom have more recently gained attention in educational and cultural research. Therefore, the overlay map highlights a shift in research focus toward more contextual issues in the era of Industry 4.0 and the growing importance of local wisdom in strengthening character-based education.

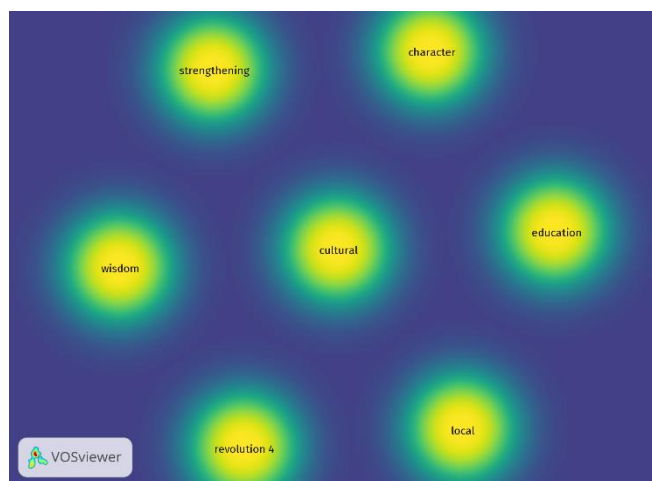


Figure 3. Density Visualization

The density visualization map illustrates the intensity distribution of keyword occurrences in the literature using a heatmap approach. Yellow areas on the map indicate high concentrations or frequent occurrences of keywords, while green to blue areas denote lower intensities. The visualization shows that keywords such as strengthening, character, education, cultural, local, wisdom, and revolution 4 display distinct yellow areas, suggesting that these themes are central to the analyzed research. The position of cultural near the center indicates its role as a connecting element linking various issues, ranging from education and character strengthening to adaptation to Industry 4.0. This finding reinforces that the research focus extends beyond education and character development, emphasizing instead the integration of local wisdom and cultural values as strategies to navigate global challenges. Therefore, the density map reaffirms that the themes of culture, local wisdom, and character-based education constitute interrelated and complementary core topics in the current academic discourse.

Discussion

The results from the three visualizations generated using VOSviewer software provide a comprehensive overview of the research landscape related to character education, cultural values, local wisdom, and the challenges of the Fourth Industrial Revolution (Industry 4.0). The network map illustrates that all keywords are interconnected, indicating that research in this field does not stand alone but forms a coherent and interrelated scientific ecosystem (Dari, 2025). This finding reaffirms that culture-based character education and local wisdom are not merely academic issues but have evolved into a strategic discourse in responding to the dynamics of globalization and industrial transformation (P. Putra & Aslan, 2020).

The network visualization shows strong linkages among the keywords education, character strengthening, cultural, and local wisdom. The keyword cultural occupies a central position, signifying its role as a key connector in developing character education that aligns with Indonesia's socio-cultural context. This aligns with the view that character education cannot be separated from local cultural values to ensure it is meaningful, contextual, and capable of shaping students' personalities holistically (Cahyawati, 2022;

Dhofier, 2022). Thus, the integration of cultural values and education serves as the foundation for developing a generation that is both strong in character and globally minded (Saleh & Arif, 2021).

Meanwhile, the overlay visualization provides deeper insights into the temporal dynamics of research themes. The bright colors associated with the keywords *revolution 4* and *local wisdom* indicate that these topics have become increasingly prevalent in recent studies. This shift demonstrates a growing academic interest in the importance of integrating local wisdom with the need to adapt to digitalization and technological disruption (Ridho et al., 2025; Taylor, 2020). The direction of research is no longer purely theoretical but increasingly emphasizes practical strategies for addressing social and technological change in the era of Industry 4.0 (Angelina & Fuad, 2025; Syafi'i & Masbukin, 2022).

The main strength of employing three types of visualization, network, overlay, and density visualizations, lies in their ability to provide complementary perspectives. Network visualization presents conceptual relationships among themes, overlay visualization highlights the temporal evolution and current research focus, and density visualization emphasizes areas of research concentration. The combination of these three visualizations strengthens the validity of the bibliometric analysis by illustrating conceptual linkages, developmental trajectories, and research intensity in the field of culture-based character education (Dafit & Ramadan, 2020; Ni Kadek Tania Amanda Marjaya & Gede Wira Bayu, 2024).

The density visualization results show that the core keywords, *education*, *character strengthening*, *cultural*, *local wisdom*, and *revolution 4*, all appear in yellow zones, indicating high research intensity around these topics. This suggests that character education, cultural values, and local wisdom have become dominant focuses in both national and international literature. These studies generally emphasize the synergy between cultural preservation and 21st-century skill development, positioning education not merely as a means of knowledge transmission but as a process for character building and national identity formation (Musthofa, 2022).

From a practical perspective, these findings have significant implications for educational policy and practice. The integration of local wisdom into the curriculum should be strengthened to make education more contextual, adaptive, and sustainable. Teachers can optimize regional cultural values as learning resources to foster resilience, collaboration, and national spirit among students in the digital era (Eko Anang, 2022; Fikri, 2022). The strength of this approach lies in its ability to connect traditional values with 21st-century learning needs, enabling students to understand and apply local culture within a global context.

Furthermore, culture-based education provides a strong moral foundation and identity for students to navigate the forces of globalization, which often carry external values (Parawati, 2024). Reinforcing values such as mutual cooperation (*gotong royong*), tolerance, and social responsibility is essential for developing a generation with strong character and global competitiveness. However, a limitation of this study lies in the scope of the bibliometric analysis, which relies solely on scientific publication data without

directly assessing implementation in real educational settings. As a result, contextual aspects, such as the effectiveness of applying local culture across regions, are not fully captured.

The strength of this research lies in its ability to map research trends comprehensively and reveal relationships among cultural values, character education, and technology. Nevertheless, its limitation is that the analysis is based solely on bibliographic data, which does not provide in-depth insights into implementation contexts. Therefore, future research is recommended to combine bibliometric analysis with qualitative approaches or systematic reviews to explain how cultural integration and character education are practically implemented in learning contexts within the era of the Fourth Industrial Revolution.

CONCLUSION

The results of the bibliometric analysis using VOSviewer visualizations reveal that research on Nusantara culture within the context of elementary education predominantly focuses on the themes of education, cultural, local wisdom, strengthening, and revolution 4. The keyword cultural emerges as the central connector, while local wisdom and revolution 4 appear as increasingly prominent topics in recent studies. These findings affirm that Nusantara culture plays a strategic role in strengthening national identity and remains highly relevant for integration into the educational system in the era of the Fourth Industrial Revolution. Looking ahead, future research should focus on developing culture-based learning models, integrating local values with digital technologies, and formulating education policies that maintain a balance between cultural preservation and global demands. Such efforts are essential to ensure that education not only equips students with modern competencies but also cultivates a deep appreciation for local culture and identity.

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