



Development of Local Wisdom-Based Digital Teaching Materials to Enhance Cultural Literacy and Character: A Needs Analysis

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Abstract: Digital transformation in education has not been optimally utilized to enhance students' cultural literacy and character development in junior high school Social Studies (IPS). The limited availability of digital learning materials integrating local wisdom has contributed to weak cultural literacy and insufficient character education. This study aims to analyze the need for developing local wisdom-based digital learning materials to improve students' cultural literacy and character in Social Studies learning in Sijunjung Regency. Using a Research and Development approach with the Borg and Gall model, data were collected through Focus Group Discussions, questionnaires, interviews, and observations involving 10 Social Studies teachers and 153 students from six junior high schools. The findings indicate that Social Studies learning remains largely textbook-centered, with minimal integration of local culture. While 88% of students show interest in digital-based learning, only 34% are familiar with the Marosok tradition, and 90% of teachers have not used culturally integrated digital materials. These results reveal a gap in cultural literacy and highlight the need for contextual digital learning materials that integrate Social Studies content with local values.

Keywords: Character Development; Cultural Literacy; Digital Teaching Materials; Local Wisdom; Social Studies Learning

Introduction

The development of digital technology in the 21st century is very rapid and has brought significant transformations in the world of education (Philiyanti & Rismorlita, 2021). This development affects students' learning resources and the materials taught by teachers in schools (Pratolo & Solikhati, 2020); (Lestari et al., 2025); . These changes include the way teachers and students access, present, and develop learning materials. In the midst of the strong current of globalization, the big challenge facing Indonesian education is how to utilize these technological advances to strengthen cultural

literacy and shape students' character holistically (Wiyanarti et al., 2024); (Annam & Doyan, 2023); (Yulianti et al., 2025). Nationally, the literacy of the Indonesian people has increased, especially in the province of West Sumatra, which increased by 5% from 2023 to 2024 (Utami et al., 2022); (Syuzita & Doyan, 2023). This increase must be accompanied by cultural literacy skills and character values so that traditional values remain sustainable by instilling character in the younger generation in this digital era (Hamzah et al., 2021); (Namira et al., 2024).

Social Sciences subjects at the Junior High School (SMP) level have a strategic role in shaping character

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values, social awareness and instilling cultural literacy in students (Maulani et al., 2021). Building student character through digital-based teaching materials is the basic foundation in local wisdom-based education in social studies learning in schools (Heryani et al., 2022; Agustini et al., 2020).

However, based on field data, it shows that social studies learning faces various obstacles (Fatimah et al., 2019). One of the main problems is the lack of availability of relevant and contextual digital learning resources used by teachers in schools, such as the use of digital-based teaching materials designed by teachers themselves (Jamika et al., 2023). In addition, teachers have difficulty integrating Minangkabau local wisdom material into social studies teaching materials (Efendi, 2014). This has an impact on the limited meaningful and contextual learning experiences for students, as well as the limitations of students' cultural literacy (Siska, 2018).

Observation data, supported by Focus Group Discussion (FGD) results with Social Studies teachers (MGMP) in Sijunjung Regency and the distribution of questionnaires to both teachers and students, indicate that a significant majority of students lack a profound understanding of Minangkabau local cultural traditions. The Minangkabau people are notably prominent in the field of commerce. Referencing the characteristics of traditional markets in (Zusmelia et al., 2020), markets serve as hubs for cultural relations, identity, and local power, where society readily internalizes interpersonal connections and the changes that occur. Consequently, traditional markets reflect the existing culture of a society. One such example is the Marosok tradition in the Minangkabau livestock markets, which are distributed across the West Sumatra region.

The Minangkabau livestock market possesses distinct characteristics and uniqueness in its buying and selling transactions, which embody the philosophical values of *Adat Basandi Syarak, Syarak Basandi Kitabullah, Syarak Mangato, Adat Mamakai* (Custom is based on Sharia, Sharia is based on the Quran; Sharia mandates, Custom implements) (Judiasih et al., 2025; Mochlasin & Budiharjo, 2024). This philosophy is a fundamental key to the success of Minangkabau traders. As business actors residing in the *Nagari* (hometown) or elsewhere, the Minangkabau people consistently uphold the principle of prioritizing mutual benefit based on *musyawarah* (deliberation) and *mufakat* (consensus). In developing and improving the economy, the Minangkabau people do not merely prioritize personal or group wealth through monopolies or economic practices that disadvantage others.

This philosophy serves as the foundation of the *Marosok* tradition, which prioritizes togetherness, mutual respect (*tenggang rasa*), and empathy among traders to prevent disputes during livestock

transactions. Furthermore, core character values such as honesty, responsibility, and diligence are inherently reflected in this trading practice. The *Marosok* tradition represents a Minangkabau cultural identity that must be preserved and introduced to the younger generation. This tradition involves livestock transactions using finger symbols covered by a *sarong*. *Marosok* is also characterized as a silent bargaining process between sellers and buyers, conducted solely through the touch of fingers hidden beneath a cloth or sarong. The lack of knowledge among the younger generation regarding the *marosok* tradition indicates a deficiency in students' cultural literacy, which should ideally be fostered through Social Studies education. In fact, an understanding of local culture is a vital foundation for character building, encompassing attitudes of responsibility, honesty, cooperation, and concern for others.

Previous studies have explored the utilization of local wisdom-based teaching materials, such as the work by Arsih et al. titled 'Analysis of Digital Book Integrated Local Culture as the Internalization of Character Education During Pandemic,' which demonstrates that integrating local culture into digital teaching materials effectively internalizes character values in students. Furthermore, a meta-analysis by Yusuf, 'The Influence of Local Wisdom-Based Learning Media on the Character of Students in Indonesia,' reveals that local wisdom-based learning media significantly influence student character. These findings suggest that every form of local wisdom possesses inherent character values that can be integrated through teaching materials or learning media. This present study, however, specifically focuses on the integration of Minangkabau local wisdom into Social Studies learning to enhance cultural literacy and cultivate character traits that reflect Minangkabau cultural values, specifically the *Marosok* tradition in livestock markets.

Based on the aforementioned issues, this research aims to identify the needs of teachers and students for digital teaching materials based on local wisdom. The ultimate goal is to improve cultural literacy and strengthen the character of students in Social Studies subjects at Junior High Schools in Sijunjung Regency.

Method

Research Design

This study uses a quantitative and qualitative descriptive approach. This study is part of a research and development (R&D) project based on the Borg and Gall model (Sudarmaji et al., 2020), specifically at the needs analysis stage (research and information collecting). It aims to explore curriculum analysis and the need for

digital teaching materials that integrate local wisdom into the learning process (Bhatt & MacKenzie, 2019).

Participants

The subjects of this study were social studies (IPS) teachers and students at junior high schools (SMP) in Sijunjung Regency (Thor & Karlsudd, 2020). The Focus Group Discussion (FGD) stage involved 10 junior high school social studies teachers, 2 Marosok cultural experts, and the researcher. Meanwhile, the student respondents who completed the questionnaire totaled 153, drawn from various junior high schools across Sijunjung Regency (Holmberg, 2022).

Data Collection

The data collection methods in this study included the distribution of questionnaires to teachers and students to obtain quantitative data on the needs and interests related to local wisdom-based digital learning resources, as well as Focus Group Discussions (FGDs) with social studies teachers to explore instructional needs and challenges in the learning process (Falloon, 2020).

Teacher and Student Questionnaire

The teacher respondents in this study consisted of ten individuals, while the student respondents totaled 153. A closed-ended questionnaire was distributed to collect data on the characteristics of both teachers and students, particularly in relation to their needs for digital teaching materials and the perceived urgency of integrating local wisdom into the learning process (Rahmana Sari, 2021).

Focus Group Discussion (FGD)

After the distribution of questionnaires to teachers and students, a Focus Group Discussion (FGD) was conducted with junior high school social studies (IPS) teachers and local cultural experts in Sijunjung Regency (Komala et al., 2024). The selection of FGD participants aimed to identify the needs of both teachers and students regarding local wisdom-based digital teaching materials in IPS learning. The FGD was held face-to-face at SMPN 15 Sijunjung and focused on the following topics (Yelubayeva et al., 2024): The curriculum currently in use; availability of learning resources; integration of Marosok local wisdom values into social studies learning; Challenges faced by social studies teachers in implementing instruction, and Character education through social studies learning.

Based on input and suggestions from teachers and cultural experts, the FGD produced conclusions and analyses that were recommended for the development of

local wisdom-based digital teaching materials (Hasanah et al., 2022). The stages of the FGD process are illustrated in the diagram below (Figure 1).

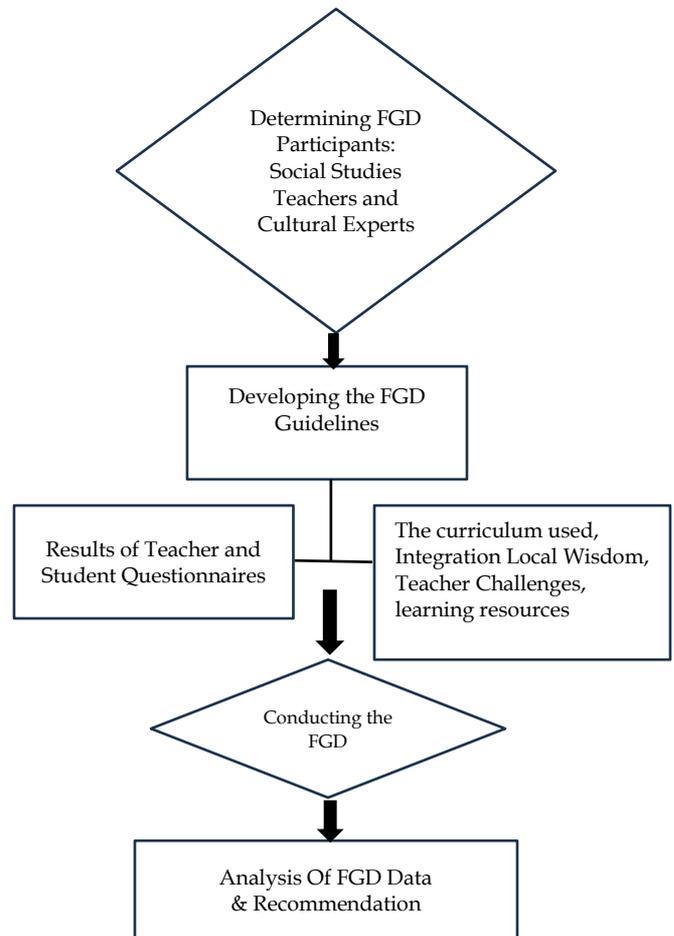


Figure 1. The stages of the FGD process

Data Analysis

The data from the needs analysis questionnaires administered to teachers and students were analyzed using descriptive statistical mean calculations. According to Sugiyono (2022), the formula for calculating the mean is as follows (Wirawan, 2020).

$$Total\ Score\ of\ Respondent = \sum_{i=1}^6 X_i \tag{1}$$

Where:

X_i $X_i = 1$ (Yes) or 0 (No)

Meanwhile, the data from the Focus Group Discussion (FGD) were analyzed using thematic analysis. The thematic analysis aimed to identify recurring themes and key insights based on participants' responses during the discussion (Lopus et al., 2019). The thematic analysis table used in the FGD activities is presented as follows (Ambarwati & Mandasari, 2020):

Table 1. Thematic Analysis of Focus Group Discussion Results with Social Studies Teachers

FGD Topic	Initial Code	Category	Emerging Theme
Merdeka Curriculum	Difficulty in designing localized teaching modules	Teacher readiness in implementing the Merdeka Curriculum	Need for guidance in implementing localized Merdeka Curriculum components
Availability of Learning Resources	Limited contextual learning materials	Lack of locally relevant resources	Need for digital learning materials based on local wisdom
Integration of Local Wisdom into Social Studies	Difficulty integrating local traditions into lessons	Local wisdom integration strategies	The need for a model for integrating local wisdom in social studies
Students' Cultural Literacy	Low student awareness of local culture	Poor cultural literacy among students	Strengthening cultural literacy through digital media grounded in local wisdom
Teachers' Challenges in Teaching and Learning Process	Time and resource constraints	Barriers in instructional material development	Need for technical and resource support for teachers
Character Education in Social Studies	Teaching values through local narratives	Character development via cultural content	Digital materials as a medium for character education through local wisdom

Result And Discussion

Focus Group Discussion (FGD) with Social Studies Teachers

Focus Group Discussion activity, abbreviated as FGD, with junior high school social studies teachers at five schools in Sijunjung Regency aims to explore the availability and use of social studies learning resources, integration of local wisdom in learning, problems faced by teachers in the learning process, strengthening

students' character values through learning and teachers' needs for learning resources in the digital era.

This limited FGD activity found several important points in the social studies learning process in junior high schools at the research location school (Choi et al., 2020). These findings are the basis for the needs analysis used by researchers to develop digital teaching materials based on local wisdom (Bhatt & MacKenzie, 2019). The following is a summary table of the results of the FGD with social studies teacher (Vioreza et al., 2022).

Table 2. Summary of FGD Findings

Topics	Findings	Recommendation
The curriculum used	Independent Curriculum	Continued with the impactful independent curriculum
Availability of learning resources	Most of them still rely on textbooks and worksheets, none of them use digital learning applications as learning resources.	There is a need for digital learning resources based on local wisdom to improve students' cultural literacy.
Integration of local wisdom in social studies learning	Still limited verbally, not yet described in modules and learning	There is a need to integrate local wisdom values in learning
Teachers' Challenges in the Teaching and Learning Process	Low interest in reading among students, limited digital-based facilities and infrastructure	It is hoped that the availability of digital learning resources can increase students' interest in learning.
Instilling character values in learning	Still weak in the implementation of character value instillation in the learning process	Need to strengthen values such as mutual cooperation, responsibility, and honesty through social studies

Source: Data processed from FGD Minutes, 2025

Based on the table data above, it can be explained that the low utilization of technology in learning shows a gap in digital transformation in education, therefore the development of digital teaching materials based on local wisdom is important, especially in social studies learning in junior high schools. In addition, digital learning resources are also able to support students' reading and learning interests so that they will support students' cultural literacy and character skills (Karsiwan; et al, 2017).

Teacher and Student Questionnaire

The next stage of needs analysis is the distribution of questionnaires to teachers and students in order to determine the needs of teachers and students for digital materials, characteristics of cultural literacy and character in social studies learning and students' interests in digital learning media (Wirawan, 2020). The following are the results of teacher and student questionnaires (Irwan et al., 2025).

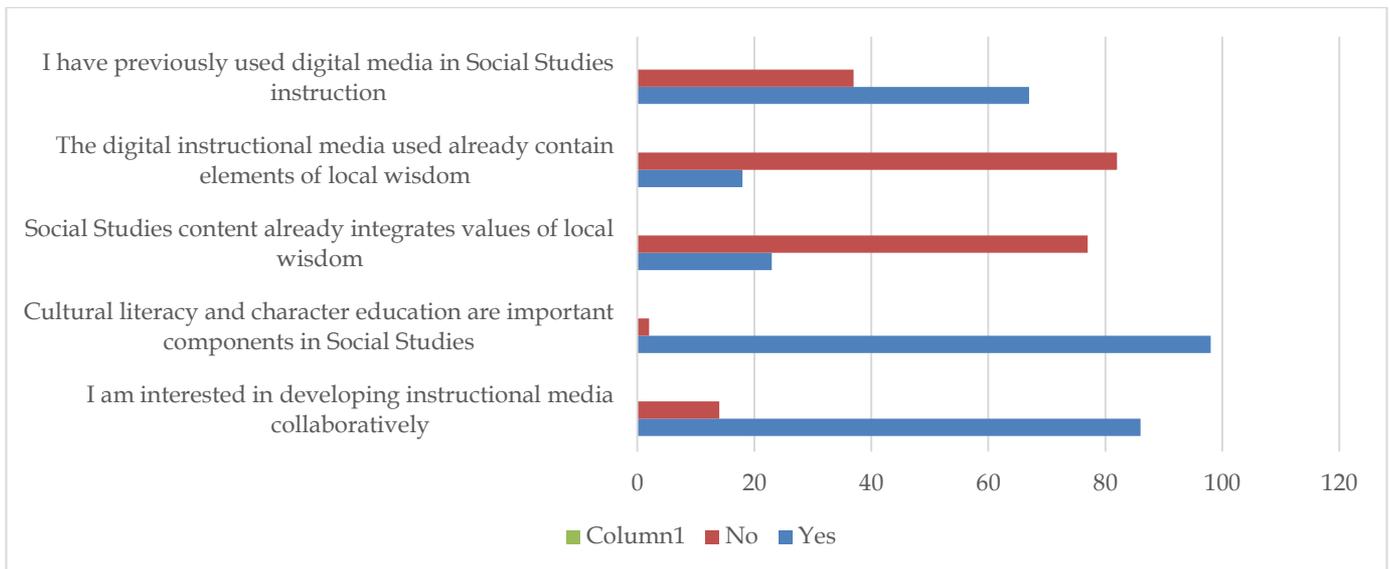


Figure 2. Teacher Questionnaire Data

Based on the data above, it can be described that the results of the teacher questionnaire show that teachers in their daily lives use digital tools, namely 70%, but not 90% stated that they had not used them in the learning process that integrates with local culture (Antika et al., 2023). Then, seen from the needs and enthusiasm of teachers, all stated that they needed digital learning resources based on local wisdom (Rina et al., 2020). Then

the results of the questionnaire showed that social studies learning has not optimally integrated Minangkabau local wisdom, for this reason it is necessary to implement local wisdom in learning as an effort to preserve local wisdom values in the digital era through the development of digital teaching materials based on local wisdom (Alam, 2022).

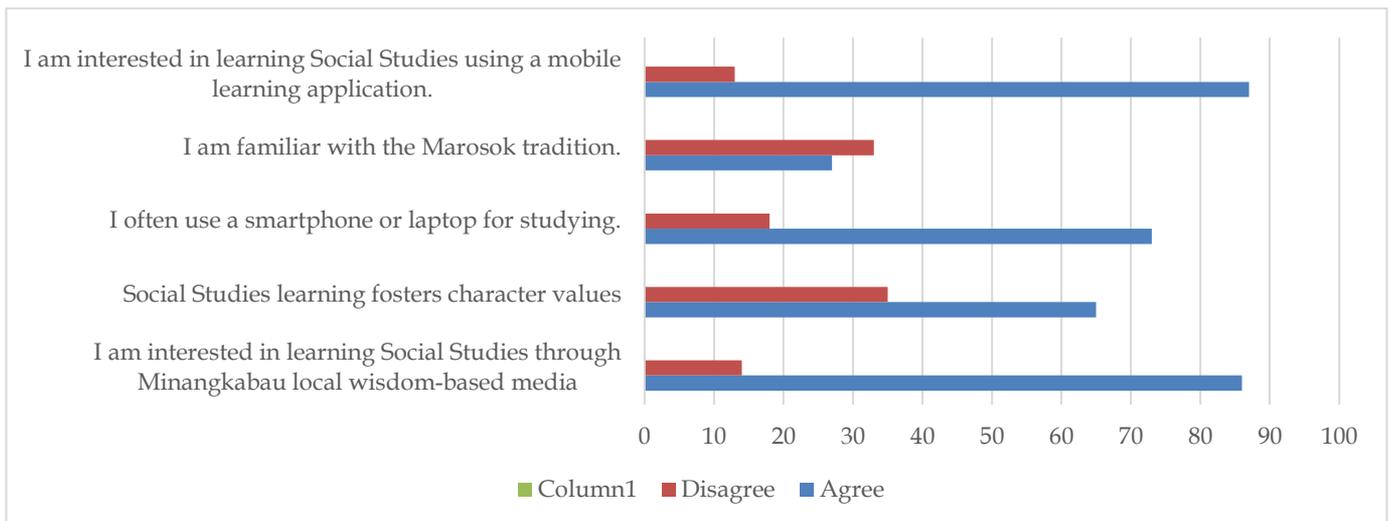


Figure 3. Student Questionnaire Data

Based on the results of the questionnaire distributed to junior high school students in Sijunjung Regency above, it can be described that 88% of students are interested in learning social studies using digital teaching materials, but only 34% of students know about the marosok tradition at the livestock market (Yusuf, 2023). This shows that students' cultural literacy is still weak (Rafiuddin et al., 2024). Students show a positive attitude towards curiosity about digital teaching

materials based on local wisdom and students also want social studies learning to foster character values (Sulianta, 2016).

Based on the questionnaire data, it can be analyzed and recommended that there is a need to develop interactive digital learning resources that combine IPS and Minangkabau local wisdom and integrate the values of national character and local culture in each IPS learning topic.

Conclusion

The results of this study confirm a significant gap between the necessity for 21st-century technology-based learning and the current preservation of local culture in Social Science (IPS) education. Quantitative data reveals that 90% of teachers have not utilized digital teaching materials integrated with local culture, despite a "Very High" expressed need for such resources. While students demonstrate high interest in digital media, their cultural literacy remains deficient; for instance, only 34% are familiar with foundational local traditions like *Marosok*. This lack of integration across broader Minangkabau cultural systems and values—rather than a single tradition—has contributed to suboptimal cultural literacy and character building among students. Therefore, a comprehensive needs analysis indicates that the development of contextual, interactive, digital teaching materials based on local wisdom is a necessary and justified next step. Such a development is recommended to address the current pedagogical void and provide a framework for future testing to determine its effectiveness in strengthening student character and cultural awareness.

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Author Contributions:

Conceptualization, F.L and Y.M; methodology, F.L, Y.M, S.J.; formal analysis, investigation & resources, F.L, Y.M. and S.J.; writing—preparation of original draft, F,L.; writing—reviewing and editing, F,L. All authors have read and approved the published version of the manuscript.

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Conflicts of Interest

This research is conducted to provide information to the public regarding the research that has been conducted so that it can be used for educational purposes. In addition, this research is used by researchers for lecturer performance loads and accreditation needs of study programmes and institutions

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