

Analysis of The Need for Teaching Modules Based on Local Wisdom in Sidoarjo

Fitriya Ningsih, Fiena Saadatul Ummah, Putri Rachmadyanti, Neni Mariana

Universitas Negeri Surabaya

*Corresponding author: putrirachmadyanti@unesa.ac.id

Abstract

Sidoarjo Regency has diverse local wisdom. However, the educational potential has not been utilized optimally. This research aims to (1) identify and map the types of local wisdom of Sidoarjo that have the potential to be integrated into learning; (2) Analyzing the perception and needs of teachers and students for teaching modules based on local wisdom; and (3) Formulate an outline of the characteristics of effective teaching modules. The method uses qualitative research of the type of case study at SD Negeri Waru 1 Sidoarjo. Observation, interview, and documentation data collection techniques. Data is analyzed through data reduction, data presentation, and conclusion drawn. The results of the study revealed that: (1) There are five pillars of local wisdom in Sidoarjo that have great potential as a source of learning, namely customs, culinary, dance, historical sites, and batik; (2) Teachers experience difficulties in integrating local wisdom due to the limited systematic and applicative teaching modules, while students crave contextual learning that can foster cultural pride; and (3) Teaching modules with thematic-integrative characteristics are needed, using a project-based learning approach, and equipped with LKPD and interesting audiovisual materials.

Keywords: Teaching Modules, Local Wisdom, Sidoarjo



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Introduction

In an era of globalization marked by massive and unlimited flows of information, the younger generation faces a major challenge in maintaining its cultural identity. The dominance of foreign cultures spreading through digital media and pop culture has the potential to erode pride and understanding of local wisdom values (Swarna et al., 2024). If left unchecked, this phenomenon will result in the disruption of the chain of cultural preservation and the fading of national identity in future generations. In this context, education plays a crucial role that can no longer be seen solely as an institution for the transfer of knowledge (hard skills), but must also function as a medium for character building and instilling national values (soft skills) (Allolinggi & Tangkearung, 2024). The integration of local content into the education curriculum is a strategic necessity for building a strong cultural foundation and shaping individuals who are not only academically intelligent but also culturally resilient (Carolina et al., 2024). Thus, schools must transform into active and dynamic bastions of cultural preservation.

In a more specific context, Sidoarjo Regency is an area that holds a wealth of diverse and highly valuable local wisdom. This cultural wealth is manifested in various forms, ranging from customs such as Syawalan and Larung Sesaji, culinary specialties such as Petis and Kerupuk Udang, Gandrung Marsan dance, historical sites such as Candi Pari and Candi Sumur, to Sidoarjo's distinctive batik motifs that are rich in meaning (Thohari, 2024; Dharmas et al., 2024). Each element of local wisdom contains noble values that can be transformed into contextual learning resources. For example, the complex process of making shrimp crackers reflects the values of perseverance and precision, while Sidoarjo batik patterns often depict the ecological wisdom and philosophy of life of the community (Rovic, 2023). In addition, a strong entrepreneurial spirit can be seen in the dynamics of small and medium industries that process local fishery and agricultural products. However, this great educational potential has not been optimally and systematically utilized in the learning process in schools, especially in the Sidoarjo region itself (Yasin &

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Masykuri, 2025). Learning is still often focused on general national teaching materials, thus failing to touch on local realities and potential that could actually increase the relevance and meaningfulness of learning for students.

Although the potential of Sidoarjo's local wisdom as a learning resource has been recognized, there is a significant gap between this potential and the reality in the field. The reality is that there is a lack of teaching materials that specifically accommodate and systematically include content on Sidoarjo's local wisdom. This condition has direct implications for the learning process, including: (1) Teachers often face difficulties in integrating local content into their lesson plans due to the lack of practical, structured, and easy-to-apply teaching modules (Putri, 2019). Without clear guidance, these integration efforts tend to be sporadic, improvisational, and highly dependent on the initiative and understanding of individual teachers regarding local culture, which is often limited (Zahro & Fauziah, 2024); and (2) As a result, the learning that takes place tends to be abstract and lacks direct relevance to the daily socio-cultural environment experienced by students in Sidoarjo. Furthermore, a review of the literature shows that most previous studies on the local wisdom of Sidoarjo have focused on documentation, inventory, or description of cultural values themselves (Sugiantoro, 2022; Thohari, 2024). Meanwhile, there is still very limited research on needs assessment or in-depth needs analysis as an empirical basis for the development of specific and contextual teaching modules based on local wisdom (Andriani, 2024). This gap is what this study aims to fill.

More specifically, the research problems at SD Negeri 1 Waru Sidoarjo include (1) The potential of local wisdom that exists around the school is not touched upon in learning: The environment around SD Negeri 1 Waru is actually rich with living learning resources. Some students are children of Gedog batik craftsmen or Lontong Kupang sellers. The traditions of kenduri and sedekah bumi are still routinely carried out by residents. Candi Pari can be reached within 15 minutes from the school. However, initial findings show that there are no systematic efforts to use this wealth as teaching material. Learning about cultural diversity only uses images from textbooks that are irrelevant to the context of Waru-Sidoarjo, making it feel abstract and failing to build students' emotional closeness to their own culture; (2) Teachers find it difficult to design contextual learning without clear guidance: Teachers at SD Negeri 1 Waru recognize the importance of local content but experience concrete technical difficulties. They lack the time, resources, and concrete examples to design lesson plans or student worksheets that integrate, for example, the process of smoking milkfish into science lessons, or teaching geometric concepts through Gedog batik motifs. As a result, they revert to conventional methods. One teacher admitted, "I want to take the students to Pari Temple, but I'm confused about how to design learning activities so that it's not just a field trip. I'm also worried about permits and costs"; (3) Students experience a disconnect between their cultural identity and their school learning experiences: Many students enjoy Lontong Kupang as a daily meal or have seen the Ujung Dance at village events, but they do not see the connection between these personal experiences and their school lessons. When studying social studies about livelihoods, they are not encouraged to analyze their parents' culinary businesses. When studying arts and culture, they are not taught the Ujung Dance. This situation creates a dichotomy in which local culture is only part of domestic life, while school is considered a space for "general" knowledge that is detached from the local context. This risks weakening their sense of pride and ownership of their cultural heritage; and (4) The Merdeka Curriculum has not been optimally implemented to strengthen the Pancasila Student Profile in terms of global diversity: SD Negeri 1 Waru has begun to implement the Merdeka Curriculum, which emphasizes differentiated learning and profile strengthening projects. However, in practice, the projects carried out are still general in nature (such as planting plants or recycling waste) and have not taken advantage of opportunities to deepen students' understanding of Sidoarjo's local wisdom as a concrete form of "Global Diversity." In fact, strengthening local identity is the foundation for understanding and appreciating global diversity. Schools need real examples and guidance to operationalize this dimension in the context of Sidoarjo.

As an academic foundation, several previous studies have discussed related topics. Sugiantoro's (2022) research focused on documenting philosophical values in the Larung Sesaji tradition in Jabon District, Sidoarjo, while Thohari's (2024) research explored traditional Sidoarjo cuisine as a tourism asset. On the other hand, Andriani's (2024) research conducted a needs analysis for the development of an e-module based on the local wisdom of Gandrung Marsan Dance, which has touched on the needs of teachers. Its relevance to this study is that all of these studies confirm the diversity and educational value of Sidoarjo's local wisdom, thus providing a strong foundation for the urgency of the material to be integrated. However, a significant research gap lies in the scope and focus of development. The studies by Thohari (2024) & Dharma et al. (2024) focus more on documentation and economic potential, without reaching a comprehensive analysis of the needs for developing teaching modules. Although Andriani's (2024) study has entered the needs assessment stage, its scope is still limited to only one cultural element (dance). Therefore, this study aims to

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fill this gap by conducting a comprehensive needs analysis covering a broader spectrum of local wisdom in Sidoarjo, including customs, cuisine, arts, historical sites, and batik, in order to formulate a holistic and contextual framework for developing teaching modules.

This study presents two main aspects of novelty that distinguish it from previous studies on local wisdom in Sidoarjo and the development of teaching materials. First, it shifts the focus from merely documenting cultural wealth to analyzing operational needs for the development of applicable learning products. Most previous studies, such as Sugiantoro (2022) research on the philosophical values of Larung Sesaji or Thohari (2024) research on cuisine as a tourism asset, stopped at the level of inventory and description of values. This study goes further by deeply analyzing the real needs of end users, namely teachers and students in elementary schools, as a critical empirical basis before the module design process begins. This front-end analysis or needs assessment approach ensures that the final product (teaching module) is not born solely from the researcher's assumptions, but is truly designed to address specific challenges faced in the classroom, such as time constraints, resource limitations, and the need for practical guidance expressed by teachers. Second, the novelty of this research is very specific in terms of its contextual-spatial nature. While similar studies often take the district as a whole as their object of study, this research delves deeper into a single case study, namely SD Negeri 1 Waru Sidoarjo. This focus allows for a very detailed and contextual identification of the types of local wisdom that are most relevant and alive in the school's social environment, for example, its proximity to the Lontong Kupang center and accessibility to the Pari Temple, as well as how the socio-cultural characteristics of the school community influence their needs for a particular module. Thus, this study not only contributes to the body of knowledge on local wisdom-based education, but more specifically contributes a methodological framework and contextual findings for the development of teaching materials in schools located in suburban areas such as Waru, which experience dynamic pressures between the preservation of tradition and the penetration of global culture. Its practical contribution is a blueprint for needs analysis that can be adapted by other schools in Sidoarjo, so that further module development efforts can begin from a solid and focused database, avoiding the often ineffective "one size fits all" approach.

Based on the identification of problems and research gaps that have been described, this study generally aims to analyze the need for the development of teaching modules based on local wisdom in Sidoarjo Regency. More specifically, the objectives of this study are: (1) To identify and map the types of local wisdom in Sidoarjo, including customs, cuisine, dance, historical sites (temples), and batik, which are considered most potential and relevant to be integrated into learning materials in accordance with the Learning Outcomes (CP) in the Merdeka Curriculum; (2) To analyze the perceptions, challenges, and real needs of teachers and students in Sidoarjo schools regarding the presence and form of a teaching module based on local wisdom, as emphasized in the principle of needs analysis by (Sari et al., 2025); and (3) Formulating an outline (framework) of the characteristics of an effective, applicable, and desirable teaching module for users, which includes aspects of content organization, learning approaches, and supporting media. The results of this needs analysis are expected to not only remain at the conceptual level, but also serve as a solid and systematic empirical foundation for the next stage, namely the design and development of teaching modules that are contextual, meaningful to students, and actively contribute to the preservation of Sidoarjo's cultural heritage (Miskiyyah et al., 2025). Thus, this research is expected to bridge the gap between the wealth of local wisdom and classroom learning practices.

Method

This study uses a qualitative approach with an explanatory case study design. A qualitative approach is considered appropriate because it is in line with the characteristics of research that aims to understand phenomena in depth in their natural context, rather than testing hypotheses or making statistical generalizations (Creswell & Poth, 2016). The focus of this study is to explore and describe in detail the need for the development of teaching modules based on local wisdom in Sidoarjo Regency. Through this approach, researchers can explore the perceptions, experiences, and needs of stakeholders, particularly teachers and students, regarding the integration of local wisdom into learning.

This study relies on two types of data sources, namely primary data and secondary data. The primary sources in this study are teachers and students at SD Negeri Waru 1 Sidoarjo. Data from teachers will explore perceptions, teaching experiences, obstacles, and specific needs related to the integration of local wisdom. Meanwhile, data from students will reveal their interests, acceptance, and expectations of contextual teaching materials. The secondary sources in this study include written documents such as the cultural profile book of Sidoarjo Regency, local historical archives, relevant previous scientific journals, and school curriculum documents.

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Data collection in this study was conducted using three complementary techniques, namely observation, in-depth interviews, and documentation studies. First, observation was conducted in the school environment to directly observe the learning practices that took place and the socio-cultural context in which local wisdom lived and was practiced (Moleong & Surjaman, 2014). Second, in-depth interviews were conducted with teachers and students using open-ended interview guidelines to explore their perceptions, experiences, needs, and expectations regarding the integration of Sidoarjo local wisdom into teaching modules (Bungin, 2011). Third, a documentation study was used to collect relevant secondary data, such as syllabi and textbooks used in schools, existing modules (if any), regional historical archives, photos of cultural activities, a book profiling the culture of Sidoarjo Regency, and previous scientific articles (Sugiono, 2016). Triangulation of techniques by combining data from these three methods is expected to increase the validity and reliability of the research findings (Creswell & Poth, 2016).

Data analysis in this qualitative study will follow the interactive model proposed by Miles et al. (2019), which consists of three stages: (1) Data Reduction, (2) Data Presentation, and (3) Drawing Conclusions/Verification.

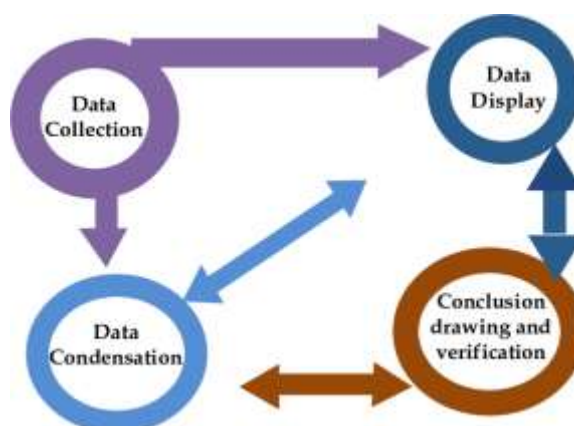


Figure 1. Qualitative Data Analysis Stages

First, data reduction was carried out continuously during and after data collection. At this stage, raw data obtained from interview transcripts, observation notes, and documents were selected, centralized, simplified, and transformed into a more structured form. This activity includes the coding process to identify themes, patterns, and categories relevant to the research focus, namely teaching module requirements (Sugiono, 2016). Second, data presentation is carried out by compiling a set of organized information to facilitate drawing conclusions. The reduced data is presented in the form of matrices, tables, flowcharts, or coherent descriptive narratives. This presentation allows researchers to see the overall picture and the relationships between categories, such as the relationship between certain types of local wisdom and teachers' pedagogical needs. Third, drawing conclusions and verification. From the data that has been presented, researchers begin to draw initial meanings and conclusions. These conclusions are then continuously verified throughout the research by checking them against the raw data, conducting peer discussions, or through triangulation of methods and sources to ensure their credibility (Bungin, 2011). These three stages form a cycle that ensures that the analysis produced is in-depth and reliable.

Results and Discussion

Based on observations conducted at State Elementary School 1 Waru Sidoarjo, a contrasting phenomenon was revealed between the wealth of local wisdom that exists in the community and classroom learning practices that still rarely touch on this context.

Table 1. Local Wisdom Category at Waru Sidoarjo Elementary School 1

Local Wisdom Category	Specific Examples in the School Environment
Customs and traditions	<ol style="list-style-type: none"> 1. Kenduri/Selamatan (celebration of graduation, commemoration of important Islamic holidays at school). 2. Sedekah Bumi (tradition of local residents during harvest season). 3. Nyadran (performed in coastal areas near Waru).
Local cuisine	<ol style="list-style-type: none"> 1. Lontong Kupang (widely sold around schools; some parents sell it). 2. Smoked Milkfish (a typical processed product from Sidoarjo).

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Local Wisdom Category	Specific Examples in the School Environment
Arts and crafts	<ol style="list-style-type: none"> 3. Sate Kenangan & Shrimp Crackers. 1. Tari Ujung (props stored in the school warehouse; performed at certain events). 2. Ludruk (a form of storytelling that still exists today).
Historical sites	<ol style="list-style-type: none"> 1. Pari Temple & Sumur Temple (10 km from the school, often a study tour destination). 2. Mpu Tantular Museum (Sidoarjo).
Batik craftsmanship	<ol style="list-style-type: none"> 1. Hand-drawn Batik Gedog (a motif typical of Sidoarjo; several artisans in the Waru area). 2. Pottery Industry (Tropodo, etc.).

Customary Context. Observations found that customary traditions such as Kenduri and Selamatan are actually very closely related to school social life. At the beginning of Muharram, a graduation celebration was held in a format very similar to a traditional kenduri, with lontong dishes and communal prayers. However, the educational opportunities of this moment were not fully explored. Teachers do not explicitly link this tradition to the local wisdom values of Sedekah Bumi as an expression of gratitude, even though the concepts are very similar. In fact, the school's location, which is relatively close to the coastal area, should open up insights into the Nyadran tradition, but this is not touched upon in IPAS lessons about coastal communities, whose material is still general and textual in nature.

Local Cuisine. The area surrounding the school is actually a rich "culinary laboratory." During recess, many vendors outside the school gates offer a variety of traditional snacks. Some students can be seen buying Lontong Kupang and/or Sate Kenangan brought by their parents. Unfortunately, this potential for integration has not been utilized.



Figure 2. Text Book Learning Atmosphere

Learning about healthy and nutritious food is only based on textbooks, without raising the protein-rich Smoked Milkfish as a concrete example. On one observation occasion, the teacher asked for an example of a traditional food, and some students called it "Shrimp Crackers", but the discussion did not continue to explore the process of making it which is the main livelihood of some families in Waru.

Art and History. A fact that is quite striking is the existence of the Ujung Dance property stored in the school warehouse. The property is in good condition but is only issued during a race or grand performance. In daily learning, the dance art taught is a regional dance at the national level, while the typical Sidoarjo dance is not introduced. The same is true of the potential of historical sites. Pari Temple and Sumur Temple, which are located no more than 10 km from the school, are only used as the object of an annual study tour without any effort to integrate the material into IPAS learning on an ongoing basis. In fact, observations showed that the students' enthusiasm was very high when they were invited to discuss the folklore of the origin of Pari Temple, which they heard from their parents.

Batik. The school has a policy of using batik once a week. However, a detailed observation of the batik motifs worn by the students shows that almost no one wears Batik Tulis Gedog or other typical Sidoarjo

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motifs. Most of the batik worn is batik printing with common motifs from other regions. In SBdP learning about ornamental motifs, teachers teach geometric motifs and general flora/fauna, without associating them with the richness of Sidoarjo batik motifs which are full of philosophical meaning. In fact, this can be an entrance to foster pride and preserve local cultural identity.

Observation Conclusion: The environment of SD Negeri Waru 1 Sidoarjo has actually been surrounded by very rich "life teaching materials", ranging from the aroma of Lontong Kupang in the surrounding stalls, historical traces in Pari Temple, to the rhythm of the Ujung Dance that can be revived. However, there is a translucent wall that separates the classroom from the reality of local wisdom. Local wisdom is present as the background of life, but it has not been raised as the main subject in the design of intentional, systematic, and integrated learning. This gap implies an urgent need for a teaching module that can bridge cultural richness beyond the school fence with learning activities in the classroom.

In addition to observations, the researcher also conducted in-depth interviews with teachers and students to explore their perceptions, experiences, needs, and expectations regarding the integration of Sidoarjo local wisdom into the teaching module.

The following are the results of interviews conducted by the researcher with teachers.



Figure 3. Interview with Teacher

Perception of Local Wisdom Sidoarjo. In general, teachers view the local wisdom of Sidoarjo as a very valuable cultural wealth, but it is considered still abstract and difficult to access for learning purposes. Ibu Sari, a Class V teacher, revealed with a clear metaphor, *"The local wisdom of Sidoarjo is very rich, but for us teachers, it often feels like a treasure that doesn't have a map. We know that there are Batik Gedog, Pardi Temple, and Kupang, but how to teach them systematically?"* This perception shows that although teachers are aware of the value of local wisdom, they feel they do not have a clear guide to transform it into structured teaching materials.

Experience integrating local wisdom. Teachers' experience in integrating local wisdom tends to be incidental and limited to conventional methods. Pak Budi, a social studies teacher, shared his less-than-optimal experience, *"I once tried to teach about Pari Temple in the theme of history, but at that time it was only a lecture and showing pictures from the internet. It feels superficial. For direct practice, there are constraints on costs and permits."* This experience indicates that without adequate support of teaching materials and policies, integration efforts only stop on the surface and have not touched the essence of contextual and in-depth learning.

The Need for Teaching Materials. The most urgent need expressed by teachers is the presence of teaching modules that are practical, ready-to-use, and equipped with applicable learning tools. Mrs. Ani, a Class IV teacher, clearly stated this need, *"We need a module that not only contains theory, but is complete with an applicable LKPD (Student Worksheet). For example, a simple science experiment from the milkfish smoking process, or an analysis of the economic value of the shrimp cracker business."* This statement emphasizes that teachers need more than just textbooks; they need an operational guide that can be applied directly in the classroom to bring local wisdom to life in learning activities.

Expectations for Teaching Modules. Teachers' expectations for the desired teaching module are visionary and transformative. They envisioned a module that not only adds cultural insights, but is also able to integrate local wisdom into all subjects. Mr. Ahmad, a Class VI teacher, explained his hope, *"I imagine a thematic*

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module, so it becomes a package. Learn mathematics by calculating the profit of selling Lontong Kupang, learn Indonesian through interviews with batik craftsmen. The module must encourage students to 'see' Sidoarjo as a source of knowledge." This hope shows the desire for a paradigm shift, in which local wisdom is no longer a separate object, but rather a lens through which to view and understand all disciplines. The following are the results of interviews conducted by the researcher with students.



Figure 4. Interview with Students

Perception of Local Wisdom Sidoarjo. Students view local wisdom as an integral part of their daily lives, albeit often without full awareness of its cultural value. Rara, a student of Class V, innocently stated, *"I like to eat Lontong Kupang with my grandmother, but I just found out that it is a typical Sidoarjo culinary. It was never taught in school."* While Dimas from Class IV expressed his interest in traditional arts, *"I have seen Ujung Dance at sub-district events, it is exciting. I want to be able to do that."* This perception suggests that local wisdom has become part of their personal experience, but has not been systematically connected to cultural identity and formal learning processes in schools.

Learning experience related to local wisdom. The learning experience they have experienced so far is considered monotonous and less challenging. Farel, a student of Class VI, criticized the repetitive learning method, *"At most, I was only told to keep coloring the pictures of the temple. Or being told to memorize the names of special foods. That's all."* This statement expresses a saturation of a one-way learning approach and does not provide room for exploration or development of critical thinking. The existing learning experience is considered not comparable to the rich culture they see and experience in the surrounding environment.

The need for a new way of learning. Students clearly express the need for more engaging and contextual learning methods. Sinta, a student of Class V, enthusiastically proposed, *"If you study while taking a walk to Pari Temple or see batik making firsthand, you will definitely not be bored. It's more fun than in a straight class."* This statement reflects the fundamental need for learning that is exploratory, *hands-on*, and able to bridge theory in the classroom with reality in the field. They want a learning experience that involves all the senses and emotions, not just a verbalistic transfer of knowledge.

Expectations for Learning. The deepest hopes expressed by the students are related to the formation of identity and pride as part of the Sidoarjo community. Bayu, a Class VI student, conveyed his aspirations with full awareness, *"I want there to be lessons at school that can make us proud to be Sidoarjo children. Let friends from other cities know that Sidoarjo has many cool stories and works."* This expectation suggests that behind the desire for fun learning methods, there is a deeper psychological need for recognition of cultural identity and pride in their cultural roots. They want an education that not only educates, but also builds their identity.

Based on observations and interviews, this study confirms that there is a significant gap between the rich local wisdom of Sidoarjo and the learning practices at SD Negeri 1 Waru. This discussion will examine these key findings through the lens of educational theory and previous research to emphasize the urgency of developing teaching modules based on local wisdom.

Local Wisdom as an Overlooked Context of Life in Learning. Observational findings show that local wisdom such as Lontong Kupang, Candi Pari, and Tari Ujung only serve as the backdrop of students' lives

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without being systematically integrated into learning, confirming the theory of contextual learning. According to Johnson (2002), effective learning must connect teaching materials with the real-life context of students so that knowledge becomes meaningful and easy to apply. The students' statement, "I like to eat Lontong Kupang... but we never learn about it at school," shows the disconnect between students' personal experiences and formal learning experiences. This is in line with the research by Putri et al. (2025), which found that learning that is alienated from the local context tends to produce verbalistic and less applicable understanding. Thus, the development of teaching modules that use the local wisdom of Sidoarjo as the central context is a must to create meaningful learning.

Teachers are trapped in a cycle of unpreparedness and limited teaching resources. The difficulty expressed by teachers, "We know there is Batik Gedog... but how do we teach it systematically?", reflects a classic cycle of problems in the integration of local content. This is in line with the research by Andira & Akbar (2025) that the absence of structured and easy-to-apply teaching materials is a major obstacle to the integration of local wisdom. Teachers are stuck in a position where they recognize the importance of local content but do not have the capacity and resources to develop it independently. Teachers' statements regarding the need for applicable LKPD, such as science experiments on the process of smoking milkfish, reinforce Famella's (2025) research findings that teachers need concrete operational guidelines, not just discourse. Therefore, the development of teaching modules that present lesson plans, materials, and ready-to-use LKPD is a strategic solution to break this cycle of unpreparedness.

Contextual Learning as a Bridge to Cultural Identity Development. Students' desire to have lessons that "make us proud to be children of Sidoarjo" is not just a simple wish, but reflects a psychological need for cultural identity formation. Vygotsky's Social Constructivism Theory, reinforced by Rusfandi's (2024) research, emphasizes that learning is a social and cultural process in which identity is formed through interaction with the cultural environment. When schools ignore the cultural environment closest to students, they miss the opportunity to build a strong foundation for self-identity. Teaching modules based on local wisdom, with a thematic and interdisciplinary approach as expected by teachers, can serve as a bridge connecting the cognitive realm with the affective realm, namely pride and a sense of belonging to the culture of Sidoarjo. This is in line with the principles of the Merdeka Curriculum, which emphasizes the Graduate Profile Dimension, where the dimension of global diversity can be realized through understanding and appreciation of local culture first (Karimah, 2024).

From Hidden Potential to Structured Learning Resources. The observation that Tari Ujung properties are neatly stored in a warehouse and that Gedog Batik motifs are not recognized by students is a metaphor for untapped hidden potential. This finding is consistent with the research by Dharma et al. (2024), which highlights that Sidoarjo's cultural wealth often stops at economic and entertainment functions and has not been optimally utilized as a learning resource. The development of teaching modules serves as a mechanism for curriculum enactment, which is the process of transforming hidden potentials in the surrounding environment into a structured, measurable, and evaluable learning design (Sungkowo, 2023). This module will transform Candi Pari from a mere tourist attraction into a laboratory for history and architecture, and transform the process of making Bandeng Asap into a case study in science and creative economy learning.

This discussion has a clear theoretical basis, allowing us to see how these findings relate to existing literature. First, the findings regarding the gap between living local wisdom and classroom learning are strongly supported by the theory of Contextual Teaching and Learning (CTL). Johnson (2002) asserts that meaningful learning occurs when knowledge is linked to the real-life contexts of students. Student statements such as, "I like to eat Lontong Kupang... but we never learn about it in school," clearly confirm the missing link between the context and content of learning that is criticized in this theory. The fact that teachers find it difficult to create this connection without systematic guidance is in line with the findings of Carolina et al. (2024) that the implementation of CTL is often hampered by the absence of teaching materials that bridge abstract concepts with local realities. Thus, the need for teaching modules identified in this study emerges as a practical solution to realize the principles of CTL, namely by providing a learning design that operationally links Learning Outcomes (CP) with the context of local wisdom in Sidoarjo.

Second, the needs assessment, which is the core of this study, is directly based on the principles of Instructional Systems Design. According to Sari et al. (2025), the needs assessment stage is a critical foundation that determines the success of the subsequent stages of design, development, and evaluation of learning products. The findings regarding teachers' needs for applicable LKPD and students' desire for exploratory learning methods are not merely a wish list, but rather specific learning needs and performance needs, as classified in the needs analysis model. This study fills the gap identified by Yasin & Masykuri (2025), namely that many efforts to develop local teaching materials skip the in-depth analysis stage, resulting

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in products that are less applicable. With a comprehensive methodology (observation, interviews, documentation), this study rigorously carried out the analysis stage, so that the resulting module framework has high validity in terms of needs.

Third, students' aspirations to have learning that builds pride as children of Sidoarjo are closely related to Vygotsky's Social Constructivism theory and the Concept of Cultural Identity. Saputra & Suryandi (2020) emphasize that individual cognitive development is embedded in social interactions and cultural contexts. Schools, as social situations of development, play a central role in facilitating the internalization of cultural values. When schools neglect the immediate cultural context, they hinder the process of forming a positive cultural identity. Therefore, the students' expectations are in line with the function of education as cultural transmission and enculturation. The teaching modules based on local wisdom produced from this analysis, with a thematic and interdisciplinary approach, are essentially designed to be tools and signs in the mediated learning process that enable students to construct their knowledge while strengthening their cultural identity.

Fourth, the relevance of the findings to the Merdeka Curriculum provides a new dimension of applicability. Fernando & Zumratun (2025) emphasize flexibility and strengthening the Pancasila Student Profile, particularly the dimension of Global Diversity. This study shows that the path to global diversity actually begins with a deep understanding and appreciation of local roots. The finding that local wisdom can be integrated into various subjects provides a concrete example of how the principles of differentiation and contextualization of the curriculum can be operationalized. Thus, the resulting module framework not only addresses local issues but also contributes to the implementation of ongoing national education policies by demonstrating practical methods for filling the space of freedom provided by the curriculum with grounded and meaningful content.

Overall, the findings of this study do not stand alone. They gain coherence and explanatory power when read through the lens of contextual learning theory, learning system design, social constructivism, and contemporary curriculum policy. This relationship shows that the needs analysis conducted is not an isolated empirical activity, but rather a systematic step based on educational science, while also paving the way for the development of products that are theoretically informed and practically applicable.

Conclusion

Based on the results of the research and discussion described above, the following conclusions can be drawn in response to the research objectives: (1) This study successfully identified and mapped five pillars of local wisdom in Sidoarjo that are most potential and relevant to be integrated into learning, including: (a) Customs (Kenduri, Sedekah Bumi, Nyadran) for IPAS and PKn learning about social and religious values; (b) Culinary Specialties (Lontong Kupang, Sate Kenangan, Bandeng Asap) as a context for IPAS and Prakarya learning; (c) Arts (Tari Ujung) for SBdP subjects; (d) Historical Sites (Pari Temple, Sumur Temple, Mpu Tantular Museum) as a source of learning for IPAS; and (e) Batik (Batik Tulis Gedog with distinctive motifs) for SBdP learning; (2) There is a gap between awareness of the importance of local wisdom and practice in the field. Teachers perceive local wisdom as valuable material but difficult to integrate systematically due to limited time, creativity, and the absence of ready-to-use teaching materials. The main challenge is the lack of operational modules with applicable Student Worksheets (LKPD). Meanwhile, students perceive local wisdom as a fun part of everyday life, but they crave more exploratory, contextual learning that can foster pride as children of Sidoarjo. The identified common need is a teaching module that can bridge the wealth of culture outside of school with learning activities in the classroom; and (3) Based on the findings of the needs, the outline of the characteristics of an effective and desirable teaching module was formulated, which includes: (a) Content Organization: Thematic and integrative in nature, connecting local wisdom (e.g., Bandeng Asap) with several subjects (IPAS, Mathematics, Indonesian Language) simultaneously; (b) Learning Approach: Prioritizing a scientific (5M) and project-based (PjBL) approach that encourages hands-on and minds-on activities, such as observing historical sites or practicing simple batik making; and (c) Supporting Media: Equipped with audiovisual materials (dance tutorial videos, culinary process documentaries), innovative worksheets, and digital teaching materials that are easily accessible to teachers and students. The module must also be designed to build 21st-century skills while instilling character values and local cultural pride.

Overall, this study concludes that the development of teaching modules based on local wisdom in Sidoarjo is an urgent and strategic necessity. These modules are expected to serve as operational guidelines for teachers to create contextual, meaningful, and relevant learning experiences for students, while also serving as a strategic instrument in preserving the cultural heritage of Sidoarjo for future generations.

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