

## Analysis of Primary Science Teachers' Lesson Plans on Their Awareness of Local Content in Lombok, Indonesia

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**ABSTRACT.** Integrating local content into learning is important for connecting the material to students' daily lives, especially in science education. The use of local knowledge can enhance students' understanding and appreciation, but its application still varies across different schools. This study aims to analyze primary school science teachers' understanding of the application of local content in science learning and to evaluate the extent to which this is applied in lesson planning in East Lombok Regency. Additionally, this research also identifies the constraints encountered in its implementation. This study uses a descriptive qualitative design with data collection methods including questionnaires, observation, RPP analysis, and in-depth interviews to explore understanding, perspectives, and challenges related to the implementation of local content. The integration of local content into science learning in five primary schools and madrasahs in East Lombok remains limited, with only about 18% of grade 5 and 11% of grade 6 material covering local contexts. The main discussion points include limited resources, lack of training, and a rigid curriculum. Reliance on standard textbooks and national policies also hinders the adaptation of materials to the local context. The integration of local content into science learning remains low. Professional development for teachers, increased curriculum flexibility, and the provision of appropriate resources are necessary. Future research could explore strategies to strengthen the integration of local knowledge in science learning.

**Keywords:** *Awareness, Local Content, Lesson Planning, Primary School, Science Teachers, Students*

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### INTRODUCTION

Globalisation has changed the way we view education, including science learning. The use of technology in science learning is becoming increasingly widespread, with the utilisation of multimedia, the internet, and digital applications to support a more interactive and engaging learning process (Aydin, 2021; Jang et al., 2021). This aligns with the trend in Indonesia, where technology is also increasingly being utilised to improve the quality of education, particularly in science learning at the primary school level. Technology allows teachers to present material in a more engaging and relevant way to students' lives, providing wider access to information and encouraging active student participation in the learning process (Fitriani et al., 2024; Gabbiadini et al., 2023; Simelane & Mji, 2014). However, despite the positive impact of technology on learning, significant challenges remain, particularly regarding the digital divide in technology utilisation across different regions,

especially in remote areas of Indonesia that are not fully accessible to advanced technology (McBride et al., 2023; Péréa et al., 2023).

On the other hand, although science learning is increasingly reliant on technology, there is a significant gap in the application of local content in the science curriculum in primary schools. Many science lessons still focus on global materials that are not well connected to students' daily lives, especially in the context of Indonesia, which is rich in local culture and traditions. Most of the material taught focuses more on global scientific knowledge that is not always relevant to students' local experiences and needs (Fütterer et al., 2023; Khlaif et al., 2023; Paetsch et al., 2023; Runge et al., 2023). Therefore, it is important to integrate local cultural content into science learning so that students can better understand the relationship between science and their daily lives. The use of local content such as culture, traditions, and the surrounding environment not only enriches the learning experience but also increases students' sense of pride in their cultural identity (L. U. Ali, Suranto, & Indrowati, 2025a; Fahrurozi et al., 2023; Sudarmin et al., 2017; Wathoni & Basri, 2021). Integrating local content into science learning is expected to create learning that is more relevant, meaningful, and tailored to the needs of students in Indonesia.

Local content in primary education has tremendous potential to increase student engagement and motivation. By aligning lessons with the students' surrounding environment, educators make learning more meaningful and applicable to their lives. Additionally, local content has the potential to preserve and revitalise regional languages and cultural practices, promoting bilingualism and biculturalism among students (Magdahalena & Sunubi, 2018; Novita et al., 2020; Zohdi et al., 2023). This aspect is particularly important in the context of preserving cultural diversity while preparing students to navigate a globalised world (L. U. Ali, Suranto, & Indrowati, 2025b; Omar et al., 2023; Tong & Zhou, 2023). Teaching local content also empowers students by involving local community members, such as elders and experts, in the educational process, thus facilitating intergenerational knowledge transfer and encouraging community involvement in education (L. U. Ali & Zaini, 2023; Sotero et al., 2020; Tasuah & Setiawan, 2019). As a result, local content can contribute to the development of individuals who are knowledgeable, culturally aware, and socially responsible.

Despite the proven benefits of integrating local content, gaps in its implementation within the primary school curriculum persist. Research on local content, particularly in science subjects, is still limited, and attention to teachers' awareness of its importance is still lacking (Marmoah & Poerwanti, Suharno, 2022; Pornpimon et al., 2014; Rasouli & Moradkhani, 2021; Susanto et al., 2020). Previous studies have explored the application of local wisdom and content in education but often overlook the actual integration process in the classroom and the level of teacher involvement in implementing that content. To address this gap, this study aims to 1) assess the extent to which local content is incorporated into science lesson planning at the primary school level and 2) evaluate teachers' perceptions of the importance of teaching local content. This study will use a participatory action research (PAR) design and content analysis to explore how local content can be effectively integrated into the curriculum and its impact on student learning outcomes.

In conclusion, incorporating local content into primary school education is crucial for creating a curriculum that reflects students' identities, enhances cultural pride, and fosters a sense of belonging. Although global technology and literacy are crucial in modern education, local content enriches the learning experience by connecting it to students' lived experiences. This study aims to provide a deeper understanding of how local content can be integrated into science education and its importance in enhancing student engagement, learning outcomes, and cultural awareness..

## **METHOD**

This research uses a qualitative research design with a descriptive approach, aiming to analyze primary school science teachers' understanding of the application of local content in science learning and to evaluate the extent to which this is implemented in lesson planning in East Lombok Regency (John W Creswell, 2005; Saldana, 2013; Sugiyono, 2017). Local content, which includes knowledge of local culture, traditions in the students' area of residence, and environmental ethics

related to daily life, is the main focus of this research. This research was conducted in primary schools and madrasah ibtida'iyah in East Lombok Regency, with samples randomly selected from five schools in Selong District, East Lombok Regency, which were accredited with a minimum grade of B and had complete lesson plans, particularly for science subjects. The sample selection criteria also considered that the teachers involved had more than five years of teaching experience.

Data in this study were collected through three main methods: questionnaires, observation and analysis of lesson plan documents (RPP), and in-depth interviews. Questionnaires were distributed to science teachers in grades 5 and 6 to measure their understanding of local content and its application in lesson planning. Additionally, observations were made on RPP documents to assess how much local content was included in the science lesson plans they prepared. As part of a more in-depth analysis, semi-structured interviews were conducted with ten science teachers from five selected schools to explore their perspectives on the importance of integrating local content into science lessons. This interview lasted 30 to 60 minutes and was recorded using a mobile phone to ensure accurate and detailed data.

The data analysis procedure was conducted by combining content analysis and interview data analysis. Content analysis is used to explore the extent to which teachers integrate local content into the science learning plans they develop, focusing on the topics discussed in the lesson plans and how local content becomes an integral part of classroom learning activities. To analyze the interview data, the researcher used coding techniques to filter and group information relevant to the research objectives. Data that did not support the essence of the research was eliminated, and the interview results were compiled into a verbal report to describe teachers' level of awareness regarding the application of local content in science learning. The results of this analysis were then presented in table format to facilitate understanding and provide a clear picture of the application of local content in science learning in primary schools in East Lombok Regency. The interpretation of the IPA teacher's RPP assessment score, which is identified as locally loaded, categorizes scores as follows: 0–20 (very poor), 21–40 (poor), 41–60 (sufficient), 61–80 (good), and 81–100 (very good), in order to consistently classify the quality of the RPP based on the score range (Riduwan, 2023).

## RESULT AND DISCUSSION

### Result

#### Local Content In Teaching Natural Science

Content analysis is a method that explores data on the content of teaching topics in five primary schools in the Lombok Timur district. This research involves learning plans as the object of analysis of the content used. Data analysis content is only analyzed for one semester in each class. From each school, only grades 5 and 6 have their lesson plans taken as a reference for processed data. From processed data, it was found that one semester contains ten teaching topics packaged in the discussion of light and its nature, sound and nature, eating and being eaten, energy transfer between living things, and harmonious ecosystems. Other topics in the other ten topics are magnetism, how to get electrical energy and life technology. The following is a detailed list of teaching topics for semester 1 in five schools in grade 5.

**Table 1.** Lesson Planning Content Fifth Graders of Primary School

No	Topic	MI/SD A	MI/SD B	MI/SD C	MI/SD D	MI/SD E	Local Content Percentage	
							IDF	UN-IDF
1	Light and its properties.	Identified	Unidentified	Unidentified	Unidentified	Unidentified	20	80

2	Seeing because of the light.	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	0	100
3	Sound and its properties.	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	0	100
4	Hearing because of the sound.	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	0	100
5	Eat and be eaten.	Identified	Unidentified	Unidentified	Unidentified	Unidentified	20	80
6	Transfer of energy between living things.	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	0	100
7	Harmonious ecosystem.	Unidentified	Identified	Identified	Identified	Identified	80	20
8	What and what magnets are created for.	Identified	Unidentified	Unidentified	Unidentified	Unidentified	20	80
9	How to get electrical energy.	Unidentified	Unidentified	Unidentified	Unidentified	Identified	20	80
10	Technology for life.	Unidentified	Identified	Unidentified	Identified	Unidentified	20	80
<b>Avarage</b>							18	82

Table 1 presents the lesson material planning for fifth-grade primary school students (MI/SD) with a focus on various scientific topics. This table lists the material identification status at several schools, namely primary school/islamic primary School A through primary school/islamic primary School E, and shows the percentage of local content based on two categories, IDF (Identified) and UN-IDF (Unidentified). This table begins with the topic "Light and its properties", which is noted as material that has been identified in SD/MI A with a percentage of 20% local content in IDF and 80% in UN-IDF. Most other topics, such as "Seeing because of the light" and "Sound and its properties", are recorded as material that is unidentified in all schools, with a percentage of 0% for local content in IDF and 100% for UN-IDF. There is also the topic "Eat and be eaten", which is identified in MI/SD A with a percentage of 20% for IDF and 80% for UN-IDF. Meanwhile, "Harmonious ecosystem" is recorded as material that has been identified in all schools (MI/SD A to MI/SD E), with 80% local content in IDF and 20% in UN-IDF. This indicates the diversity of approaches in these schools in understanding ecosystems.

Other topics, such as "What magnets are and what they are created for", "How to get electrical energy", and "Technology for life", have varying levels of identification in each school. Overall, the percentage of material identification across the school is 18% for IDF and 82% for UN-IDF. This result shows that at the primary school level, the lesson plans of science teachers that include local content in various topics taught are still in the very poor category, with a proportion of only 18%. This finding does not follow the Merdeka Belajar mandate issued by the Ministry of Education, which is one of the rationales for integrating local content.

This table provides an overview of lesson planning for Grade 5 students in several primary schools. The focus is on identifying local content that supports the teaching and learning process. Some of the taught topics that have been identified as having local elements are 1) force and its properties; 2) sound and its properties; 3) food chains and energy transfer; 4) harmonious ecosystems. Moreover, the local elements that have not been identified are magnetism and electrical energy. This table shows that there are gaps in the development of local wisdom-based curriculum in various schools. The identification of local content is important to ensure learning is more

relevant to students' environment and supports the formation of contextualised understanding. The integration of local elements can also increase student participation, as the material becomes closer to their daily lives. This challenge provides an opportunity for teachers and education stakeholders to work together to develop a curriculum that is more targeted, innovative and based on the local potential of each region.

Table 2. Lesson Planning Content Sixth Graders of Primary School mprovides information on lesson planning for grade 6 students in several primary schools, with a focus on identifying local content in the curriculum. The content that has been identified as local elements in certain topics, such as environmental conservation and the impact of globalisation does not yet have local elements in learning about the inventors or benefits of globalisation. This table shows the challenges in integrating local elements into Grade 6 students' learning. Identifying local content is important to create a curriculum that is relevant to the needs of students and their communities. By utilising local elements, learning can be more contextualised, engaging and able to strengthening students' cultural identity.

Table 2. Lesson Planning Content Sixth Graders of Primary School

No	Topic	MI/SD A	MI/SD B	MI/SD C	MI/SD D	MI/SD E	Local Content Percentage	
							IDF	UN-IDF
1	My best friend's plant.	Identified	Identified	Unidentified	Unidentified	Unidentified	40	60
2	My best friend's animal.	Unidentified	Unidentified	Identified	Unidentified	Unidentified	0	100
3	Let's Save Animals and Plants.	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	0	100
4	Inventors who changed the world.	Identified	Unidentified	Unidentified	Unidentified	Unidentified	20	80
5	Its discovery and benefits.	Unidentified	Unidentified	Identified	Unidentified	Unidentified	0	100
6	Let's be an inventor.	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	0	100
7	Globalization around me.	Unidentified	Unidentified	Unidentified	Unidentified	Identified	20	80
8	Globalization and its Benefits.	Unidentified	Unidentified	Unidentified	Identified	Unidentified	20	80
9	Globalization and love of the motherland.	Unidentified	Unidentified	Unidentified	Unidentified	Unidentified	0	100
<b>Avarage</b>							<b>11</b>	<b>89</b>

Table 2 presents the lesson material planning for five primary schools (MI/SD) with different topics. Each school has a different way of identifying the topics taught, such as "My best friend's plant", "My best friend's animal", and "Globalisation and its benefits". Some topics have been identified according to the Indonesian Education Development Framework (IDF), while others have not yet been identified. This difference indicates variations in curriculum implementation and understanding of how material is delivered to students.

Most of the topics in this table show a dominance of content leading to the unidentified (UN-IDF) framework, with a higher percentage compared to identified (IDF). For example, the topics "My best friend's animal" and "Let's Save Animals and Plants" have a percentage of 0% in IDF, indicating that these topics fall under the UN-IDF category. Overall, 89% of the teaching materials were not identified as local content, while 11% of the teaching materials were identified

as local content, indicating that the implementation of local content in the curriculum is still limited. This result shows that at the primary school level, the lesson plans of science teachers that include local content in various topics taught are still in the very poor category, with a proportion of only 11%. This highlights the need for alignment between the national education curriculum and local content to enhance the relevance and engagement of students in the learning process.

It was found in MI/SD D and E that local content was adapted to the same teaching topic: globalization and its benefits. Although both schools implement local content, the proportion of its use still needs to be much higher. Of the nine teaching topics, teachers did not show interest in designing teaching materials where local content played a role. In the material on globalization and its benefits, the teacher exemplifies and shows places to preserve living things around him, such as botanical forest parks.

Teachers need to be more proactive in exploring and integrating local potential as part of the teaching materials. Collaboration between schools and local communities can enrich learning by presenting relevant real-life experiences. The development of training for teachers on the implementation of local content in the curriculum is also a strategic step to improve the quality of local wisdom-based learning. Thus, strengthening local content will support the creation of more inclusive learning and have a positive impact on student development.

### **Teachers' Awareness in Teaching Local Content**

Local content, in principle, is content whose central role is in boosting communicative learning. In Lombok Timur district, teachers' awareness of using local content teaching has not been applied optimally. This indication is evident from the lesson plan document used when teaching knowledge in grades 5 and 6. Teachers' awareness of the use of local content in natural science learning should allow them to instill the value of local wisdom, including an understanding of local values and natural resources that can be integrated into the curriculum. This enriches the learning material and increases students' sense of belonging to learning, as they can see the relevance and direct application of what they are learning in their daily lives.

In the school context, the involvement of local content that teachers did not fully carry out in 5 schools in this study explained that teachers need to have complete sensitivity to using local content in natural science lessons. This awareness is minimal practice due to several factors, such as experience and limited knowledge about local content and teaching material design. Here's an interview with some primary school teachers.

*"We use existing lesson plans. The topics taught are adjusted to the books and teaching modules provided by the school. I have never had any teaching training in developing lesson plans. I hope I have a chance next time (HS)."*

*"The school has not intensively devoted time to teaching training. I have been teaching in school for a relatively long time. I still lack an understanding of teaching materials and design. Of course, there is an intention to teach better. I'm not used to making teaching materials myself. I am currently only using an existing book (LM)."*

In the context of teaching in primary schools in East Lombok District, teachers need to have deep experience and understanding of local culture and wisdom. They can incorporate real-life examples from everyday life, local traditions, or natural phenomena. For example, teachers must demonstrate some simple and modern tools in the student environment when discussing technology in everyday life. This practice allows students to understand the material better because direct examples are taken from what they experience daily. This context reinforces the understanding that learning to use something that can connect prior knowledge to the teaching material will take longer to remember than teaching material entirely foreign to students. Incorporating technology in learning with local wisdom has successfully guided students in classroom learning. Yetti and her friends' research explained it.

Teacher awareness in implementing local content should also include developing self-skills to get closer to local content related to customs. This understanding is necessary because it can increase the literacy of local content teachers to be transferred to students in the learning process in the classroom. Teachers need to identify local potentials that can be used as learning resources, develop exciting and relevant learning strategies, and make connections between natural science concepts and local realities. This has not happened in grades 5 and 6 in the five schools as described in the previous section.

Teachers' awareness of the use of local content can also motivate them to continue learning and developing themselves. They can attend trainings, seminars, or collaborations with fellow teachers to exchange experiences and ideas about using local content in natural science learning. Teachers still have difficulty involving local content with teaching materials. This factor contributes to their low awareness in practising local content in learning natural sciences in the classroom.

*"I am not very familiar with local content. Even though contextual learning is suitable for students, I still have trouble designing the material. I think that the majority of teachers do not write lesson plans. We only use existing defence plans. I see not-so-intensive teaching training reserved for primary school teachers. I want to be trained in teaching and how to design suitable teaching materials (SM)."*

Excerpts of interviews from several teachers concluded that teachers did not completely understand the design of teaching materials. Local content is considered new even if they have prior knowledge of that context. Increasing teacher awareness of the importance of local content in natural science learning is expected to create more relevant and meaningful learning and strengthen students' identity with their local environment and culture, especially in the learning context in Lombok Timur Regency.

## **Discussion**

### **Local Content In Teaching Natural Science**

Based on Table 1, five primary schools in East Lombok Regency have not fully integrated local content into their learning. The analysis of the science curriculum planning data for 5th-grade primary/Islamic schools presented in Table 1 reveals significant disparities in the identification of local content. The majority of subjects, including the perception of light and sound and their characteristics, were not recognized as local content throughout the school (0% IDF and 100% UN IDF). These findings reveal a significant lack of efforts to incorporate local context into learning planning documents, particularly for abstract and formal science topics. Overall, the low percentage of local content identification (18% IDF vs. 82% UN IDF) reflects the minimal utilization of local potential in curriculum design, which has implications for the limited opportunities for meaningful learning that connects scientific knowledge with students' real-life experiences. This data indicates a need for teachers to enhance their skills in designing teaching materials that incorporate local wisdom.

This fact explains why local content receives less attention. In practice, no more than 18 percent of teachers incorporate local content into their teaching materials. The inclusion of local content in learning is increasing, although it is only evident in a few teaching topics. (Wathoni & Basri, 2021) proposed achieving optimal learning using local content. They based their findings on several premises. Learning is a collaborative process between the subject and the object of learning (Karta et al., 2022; Nguyen & Oanh, 2025; Zhou et al., 2025). Gaps often limit students due to the absence of a connection between their prior knowledge and the teaching content. Problems such as participation, learning response, and two-way teaching arose when students' understanding of the teaching material was not satisfied (Harpiani et al., 2025; Humaida et al., 2026). The second reason stems from the fact that the selection of teaching materials fails to align with the student needs. Hamzandi and Hasan's findings from our interviews confirm that student interest significantly influences participation.

Local content about a harmonious ecosystem has been practiced at an primary/islamic primary school. Students are invited to get to know the environment and actively participate in learning. The teacher's role is to ask students to analyze the food web in the rice fields in their environment. This context teaches students the scope most closely related to the environment and culture that are part of the local ecosystem, reflecting the lives of the local community (Lestari et al., 2025; Rozanita et al., 2026). Additionally, local content is also taught in two different topics: light and its properties, and eating and being eaten. To connect students' understanding with the teaching material, the teacher chose the example of an old flashlight, which parents used to carry when leaving the house as a guide in the dark. This example is relevant to learning needs, where local content can play a role in bridging students' understanding with the learning materials around them that they are already familiar with. This fact strengthens the expert view that contextual learning is a learning model that actively creates student awareness through their local content. The closer the tools and learning resources are to the students, the better the potential for connection in their understanding.

We found a similar situation in several schools, including MI/SD C, D, and E, where local content was not prominent. In the case of MI/SD B, their lesson planning was where local content needed to be emphasized. No local content was incorporated into the learning process for the eight topics taught. Unlike the previous school, MI/SD C only implements one local subject in its learning: Technology for Life. In this lesson, the teacher presents a text about pottery, a local handicraft product. The teacher provides examples of heating tools used in the pottery drying process. The teacher then demonstrated this process to the students, aiming to illustrate the role of technology in the craft-making process.

Uniquely, MI/SD A and MI/SD E practice the same local material on the learning topic Harmonious Ecosystems. It is contradictory that MI/SD D does not connect local content with the teaching topic. The learning plan only addresses ten common issues and follows the learning plan format exemplified by each educational unit. This description explains that local content in the first-semester fifth-grade science curriculum needs to prioritize local content in the learning process. Only a few schools incorporate local content and materials related to the environment and local culture. Schools that do implement local content have been shown to have topics that reflect the lives of the local community and introduce their cultural richness to students (Supriyanto et al., 2025). However, most schools need to integrate local content into their learning, which can reduce students' understanding of the local environment and culture.

This gap has significant theoretical and practical consequences. Theoretically, science learning approaches that are not responsive to students' cultural contexts tend to maintain epistemological structures detached from the learners' social and cultural realities, thus limiting their ability to deeply internalize scientific concepts. Scientific literacy in the context of modern science education demands not only content mastery but also students' ability to connect concepts with their socio-cultural environment (A. Ali, Kadir, & Kusdianto, 2025; Richardson et al., 2020). (A. Ali, Kadir, & Ristiani, 2025) research shows that explicitly integrating cultural knowledge and local practices into science instruction increases student learning motivation and engagement, especially in indigenous communities with a unique wealth of environmental knowledge. This aligns with the findings from a community-based intervention study conducted in border schools in Papua, where a culturally responsive learning approach strengthened basic scientific literacy with significant improvements in students' conceptual understanding, attitudes towards science, and scientific behavior.

In the context of a culturally responsive curriculum, several theoretical studies emphasize that a curriculum integrating cultural contexts including local languages, traditional practices, and real-world environmental phenomena is not merely an additional pedagogical strategy but a framework that can expand access and educational equity. (Ogodo, 2024) developed the concept of Culturally Responsive Pedagogical Knowledge, which emphasizes the importance of teachers understanding students' cultural backgrounds when designing meaningful STEM experiences. This

finding indicates that teachers' pedagogical competence in connecting scientific content with cultural knowledge is a key factor in realizing contextual and inclusive science learning.

Additionally, several empirical studies from the Indonesian educational context also indicate that integrating local contexts into learning has a positive effect on student learning outcomes and engagement. For example, research on a local wisdom-based science learning model found that using local cultural contexts such as the pranata mangsa calendar significantly increased students' creativity and learning outcomes (Abidin et al., 2025; Budiartini et al., 2025; Hidayati et al., 2025; Minarti et al., 2023; Ubay et al., 2025; Widiyanto et al., 2024). Another study indicated that science learning contextualized with local culture could improve students' affective and cognitive domains, making learning more relevant to their daily lives (Budiarti et al., 2024; Sudarmin et al., 2017).

Nevertheless, barriers to implementing culturally responsive curriculum in real school practice still exist. Problems such as the lack of teaching materials sensitive to the local context and limited teacher readiness are frequently encountered obstacles (L. U. Ali, Suranto, & Indrowati, 2025a; Dalimunthe et al., 2025; Hamzah et al., 2023; Huda et al., 2024). This condition reflects the need for systemic support, including teacher training, the development of contextual learning resources, and community involvement, to strengthen schools' capacity to develop curricula that are truly responsive to local potential.

Table 2 shows the minimal local content in the science learning plans, which was found to be almost the same in sixth grade. Local content, as part of local wisdom, has not received maximum attention from primary school teachers in East Lombok Regency. This finding indicates that most learning topics, such as "Animals are My Best Friends and Let's Save Animals and Plants," still lack local content integration. This condition reflects a gap between national curriculum development policies and the actual practice of developing teaching materials at the school level. In Table 2 above, MI/SD A, MI/SD B, and MI/SD D practiced local content on the same teaching topic: Plants, My Best Friends. The concrete form of this material is the teacher asking students to discuss their concerns about plants in their surroundings with their parents. This activity is enrichment in the form of homework for each student. They were given discussion worksheets to present when school hours began. The main points to be achieved from this learning process are for the teacher to train students' sensitivity to the presence of nature in addition to communication skills. Building a reciprocal relationship between students and parents will bring learning closer to critical thinking. One of the results is that students become accustomed to thinking and exchanging understanding about a particular study. This will certainly have a positive impact on the environment and contribute to environmental conservation. This finding highlights significant gaps in the integration of local content into natural sciences education in East Lombok primary schools. The low percentage of local content in the lesson plans indicates that many teachers do not prioritize contextualizing learning materials. This is concerning, as previous research has shown that incorporating local wisdom into education increases student engagement, participation, and understanding. Failure to incorporate local knowledge into science education limits students' ability to connect learning with their daily lives, reducing their interest and motivation in scientific inquiry.

Previous studies support the idea that local content plays an important role in fostering critical thinking and cultural preservation. Research by (W. Kurniawan & Basuki, 2024) indicates that integrating local wisdom into education enhances cultural awareness and aligns with the principles of modern teaching. Additionally, research by (Rød & Karlsen Bæk, 2020) indicates that the limited time available for teachers to develop local materials is a major barrier to implementation. The lack of training and access to well-developed syllabi further exacerbates this issue.

Conceptually, this discrepancy indicates that the integration of local content has not yet been viewed as a strategic part of learning planning but rather remains supplementary and contextually limited. In fact, various recent studies confirm that aligning the national curriculum with local potential plays an important role in increasing the relevance of learning, understanding concepts, and cognitive and affective engagement among students (Fitrianto & Farisi, 2025; Putu Verawati

et al., 2022). In the context of basic education, local content not only serves as an illustration for learning but also as a medium for building students' cultural identity, social literacy, and ecological awareness from an early age.

Although some schools, particularly primary schools (MI/SD) D and E, have shown initial efforts in adapting local content to the material Globalization and Its Benefits, research findings reveal that the proportion and depth of local content integration are still relatively low. The implementation tends to be limited to providing simple contextual examples, such as using a botanical garden to illustrate the conservation of living things, without further exploration of cultural practices, local traditions, or environmental issues that are close to students' daily lives. This finding aligns with (Delimanugari, 2024) research and (Hikmawati et al., 2021) showing that many teachers still face limitations in developing locally relevant content that is structured and pedagogically integrated into thematic learning (Suryani et al., 2021; Widodo et al., 2023).

Furthermore, the study by (Fitrianto & Farisi, 2025) confirms that collaboration between schools and the local community is a key factor in enriching context-based learning materials. Involving community figures, cultural practitioners, and the school's surroundings allows students to gain authentic learning experiences that not only enhance conceptual understanding but also strengthen intrinsic motivation and active engagement in learning. In the context of Indonesia, which has high cultural diversity and local potential, this approach becomes relevant and strategic for developing contextual, meaningful, and sustainable learning (Erlangga et al., 2025; Ledang & Asshagab, 2024; Nithitakkharanon & Nuangchalerm, 2022).

The finding that local content is only identified at 18% (5th grade) and 11% (6th grade) emphasizes that the integration of local content in the science lesson plans of primary school teachers is still very lacking, causing the learning process to tend to be conducted in a context that is not yet close to the socio-cultural realities of the students. In fact, various previous studies have shown that integrating local content into science learning is important to make scientific concepts more meaningful and contextual, which impacts the improvement of learning outcomes as well as strengthening motivation and learning engagement. In other words, the low application of local content in lesson plans is not just a matter of document completeness but an indicator of the suboptimal pedagogical strategies to bridge scientific concepts with students' life experiences.

The implications of these findings highlight the necessity of enhancing teacher capacity through ongoing professional development centered on the creation and integration of local content within the curriculum. This training needs to be directed not only at conceptual aspects but also at teachers' practical ability to design learning materials, select local learning resources, and integrate local wisdom in alignment with national learning outcomes. Recent studies indicate that teachers who receive local context-based training support tend to be more adaptive and innovative in developing learning relevant to student characteristics (D. A. Kurniawan et al., 2019; Sotero et al., 2020).

Besides pedagogical aspects, educational policy support is also a determining factor in the successful integration of local content. Policies that provide schools with flexibility to develop operational curricula based on cultural context and local potential have proven capable of promoting more inclusive and contextual learning (Hsu, 2024). In the Indonesian context, education policies need to explicitly encourage the use of local content as the primary source of learning, not just a supplement, so that schools have adequate space to innovate according to local social and cultural characteristics.

Overall, the results of this study indicate that, although there were initial efforts to integrate local content into learning materials, a more systematic, in-depth, and sustainable implementation is still highly necessary. Synergy between schools, the government, and the local community is a key prerequisite for enriching learning materials that are not only academically relevant but also support students' holistic, inclusive, and locally rooted development.

### ***Teachers' Awareness in Teaching Local Content***

Local content in the context of teaching is fundamental in transforming learning. Some research notes, for example, were conducted by (Asmayawati et al., 2024) (Asmayawati et al., 2024). They found that the approach to local wisdom or local content enriches cultural treasures. Local content does not mean the teaching material is unrelated to technology. His research concluded that local content has succeeded in creating an educational environment that favours the preservation of culture so that it contributes enormously to inclusive education.

The description of local content is the focus of this research. The use of local content in natural science learning by teachers in Lombok Timur District is a very relevant and essential approach, even though the majority ignore it. Local content includes local values, cultures, traditions, and knowledge inherent in the local community. Teachers can increase their awareness of diverse cultures and environments by integrating local content into learning.

In teaching local content in five primary schools in the Lombok Timur district, teachers are not wholly aware of the application of local content in natural science learning. This indication was concluded from the analysis of lesson plan documents from two classes in five primary schools in Lombok Timur district. We found that the draft lesson plans that teachers in primary schools have made are still not in favour of local content. Not many teachers use local natural science learning content in fifth and sixth grades. This can reduce students' understanding of the local environment and culture and their interest and motivation in learning. It is crucial for schools and teachers to recognize the importance of implementing local content in learning and actively look for ways to integrate it into the curriculum. It is understood that local content can turn on students' understanding of teaching material for the closeness of teaching material to students' daily lives.

Therefore, schools should be essential in integrating local content into learning. By including local aspects in the teaching process, students can more easily understand the essence of the lesson because it will connect the lesson with the prior knowledge of previous students. This will make it easier for teachers to facilitate students with a series of existing materials. The involvement of local content in lessons has been able to bring students' memories closer to the teaching material. This certainly has a positive impact on his awareness and understanding. In the context of the discussion, protecting the environment around them is essential.

Previous research has shed light on teaching local content in the school environment. It was found that they agreed that local content had a significant effect on learning processes and outcomes. Some studies, such as those conducted by (Tong & Zhou, 2023), agree that local values can encourage students' critical thinking. Using local values does not conflict with the teacher's desired results because it aligns with modern dialogical teaching principles. In different scopes, it was found that local content also affects health. TANTUT found that ethnographic nursing approaches based on local wisdom influence adolescent care. Allegedly, the cause is the practice of local values in local knowledge, strengthening family structure, strengthening family ethical values, and building harmonization of communication between families. Not teaching local wisdom in schools can impact the loss of cultural values and local wisdom of the younger generation, thereby increasing the risk of deviant behaviour and loss of cultural identity.

However, implementing local content for learning is also a challenge for teachers. Following previous research (Rød & Karlsen Bæck, 2020) said that the lack of time for teachers to design local content materials is one of the challenges. Teachers are given a large workload, such as reports, assessments, etc. This factor can reduce the teachers' focus on designing local materials. In addition, training on the application of local content is also still limited, so most teachers also have difficulty integrating local content into their learning (Hadi & Andrian, 2018). In addition, the limited number of available syllabi is also a challenge teachers face in implementing local content in their teaching (Arizona et al., 2025; Indasari et al., 2025; Laen et al., 2019; Sakti et al., 2024). Therefore, this can also affect the inconsistency of teachers in applying local content to the teaching of Natural Sciences in fifth and 6th grades in particular.

Although this study focused on the analysis of lesson plans in general at the primary school level, the scope of this study was limited to a few schools in the Lombok Timur district. This finding does not mean that teachers' lack of awareness of local content applications in teaching natural science at the primary school level is ultimately the same and occurs in all schools at the same level. The results of this study can be different if conducted in other schools, even though they examine the exact scope of topics.

## CONCLUSION

The main findings of this study indicate that the integration of local content in primary school teaching materials is still very limited, with only a few topics incorporating local content (18% in 5th grade and 11% in 6th grade). Despite the principles of contextual learning, which emphasise the importance of connecting teaching materials to the surrounding environment, only a few teachers incorporate local content into their lesson plans. This result indicates a lack of understanding among teachers regarding the essence of local content in the learning process. The implication of this finding is the need for improved understanding and awareness among teachers in integrating local content in accordance with the principle of learning that prioritises the environment as a source of learning. The limitation of this study lies in its focus on only five primary schools, so these findings may not be fully representative of all primary schools. Future directions for this research include conducting a broader study involving more schools, analysing the influence of teacher comprehension on the quality of local content-based teaching, and developing training for teachers to better understand and implement local content in their lesson plans.

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