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The Urgency of *the Big Book* of Digestive System Ethnoscience: An Analysis of the Needs of Reading Interest and Science Literacy of Elementary School Students

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Abstract
This research is motivated by the need for contextual learning media that is able to increase the reading interest and science literacy of elementary school students in the material of the human digestive system. The research aims to analyze the need for the development of Big Books with ethnoscience content as the basis for designing learning media that is relevant to local culture. The research is a preliminary study with a mixed descriptive approach (qualitative and quantitative). The research was carried out in Muruk Rian District, Tana Tidung Regency, North Kalimantan, namely SDN 004, SDN 005, SDN 016, and SDN 024 Tana Tidung, involving 27 students and 4 teachers. Data were collected through observation, science literacy cognitive tests, closed questionnaires, and interviews. The results showed that students' reading interest was relatively high, but there were emotional barriers and uneven reading experiences. The attitude of students' science literacy is positive, but epistemic understanding and involvement in environmental issues is still limited. Students' science literacy skills are in the sufficient category, while procedural skills and scientific inquiry design are relatively low. Teachers and students expressed a high need for contextual and easy-to-understand visual media. These findings confirm the potential of *the Big Book* containing ethnoscience as a relevant medium to relate science concepts to local culture and become the basis for development and effectiveness testing at the next stage of research.

Keywords: Big Book; Digestive System; Ethnosains; Reading Interest; Science Literacy.

INTRODUCTION

Theoretically, science learning in elementary schools is directed to foster interest in reading and science literacy through contextual and meaningful learning experiences (Purnawati & Yakin, 2025; Putri *et al.,* 2024;). The Independent Curriculum emphasizes the importance of culture-based learning as a means of helping students understand science concepts in daily life (Hasibuan *et al.,* 2023; Suprapto *et al.,* 2024). This approach is in line with the developmental characteristics of elementary school students who need visual, narrative, and close media to their socio-cultural reality.

However, learning practices in the classroom still show the dominance of the use of conventional textbooks that are abstract, have minimal contextual illustrations, and do not accommodate students' cultural backgrounds (Akram *et al.,* 2022; Yulis *et al.,* 2025). This condition indicates an urgent need for learning media innovations that are not only visually appealing, but also relevant to students' life experiences. Learning media that is able to integrate science with the local cultural context is seen as important to bridge the gap between the theory of meaningful learning and the practice of science literacy in elementary schools.

Empirical facts show that the interest in reading and science literacy of elementary school students is still a fundamental problem. Data *from the Programme for International Student Assessment* (PISA) shows that the literacy achievement of Indonesian students is still below the international average (*Organisation for Economic Co-operation and Development,* 2023). This condition is strengthened by data from Education Support Statistics which shows that only 44.56% of students access libraries or Community Reading Parks, with the lowest percentage at the elementary school level of 37.31% (BPS, 2025).

On the other hand, the science learning process often does not relate scientific concepts to students' daily experiences, so science is perceived as abstract and difficult to understand material (Ganem, 2018; Kim & Park, 2024). This problem shows that there is an urgent need for alternative learning media that is able to increase reading interest while developing students' science literacy in an integrated manner.

A number of studies have shown that the use of *Big Books* as a learning medium is effective in increasing reading interest and understanding of basic concepts in elementary school students. Studies (USAID PRIORITAS, 2014) and research (Sitalawati *et al.,* 2022) report that *Big Books* with large sizes, attractive illustrations, and simple text are able to support effective *shared reading* strategies for beginner readers. In addition, Ramadanti & Putrajaya, (2025) emphasized that the integration of local content in literacy media contributes positively to strengthening cultural identity and student learning engagement.

However, these studies generally still position *the Big Book* as a reading literacy medium, not explicitly integrating it with the development of science literacy through an ethnoscience approach. Ethnoscience, which views scientific knowledge as part of the cultural practices and local wisdom of the community, is still relatively rarely implemented in science learning media in elementary schools, especially in the material of the human digestive system.

Based on the literature review, it can be identified that there is a research gap in the integration *of Big Books* with ethnoscience content as a science learning medium that is oriented towards increasing the reading interest and science literacy of elementary school students. Previous research has not examined the empirical needs of teachers and students for *Big Book media* that contextualize the concept of the human digestive system through local eating habits and culture, such as the traditional food consumption practices of the Dayak/Tidung people which are loaded with ecological and health values.

The novelty of this research lies in the approach of integrating content between science and ethnoscience in a visual-interactive Big Book format. In contrast to conventional Big Books which generally only function as a reading aid, this study develops it as a science literacy instrument that is able to contextualize scientific concepts through local practices and habits that are close to students' lives. From an educational perspective, this approach enriches contextual learning theory and multiliteracies by linking cultural narratives and scientific understanding (Akhmad & Taniredja, 2022). Thus, the ethnoscience Big Book has the potential to be a relevant innovation in supporting the Freedom of Learning policy that emphasizes authentic, inclusive, and rooted learning in the nation's culture (Kharismawati *et. al.,* 2025).

Based on this, this study aims to analyze the urgency and need for the development of a Big Book containing ethnoscience on the human digestive system material as the basis for the development of relevant, contextual, and meaningful learning media. In particular, this study identifies the condition of students' reading interest and science literacy, the needs of teachers and students for visual learning media based on local culture, and the potential of Big Book ethnoscience as a learning innovation in strengthening science literacy in elementary schools.

METHODS

The research approach used is a qualitative and quantitative descriptive *approach*, as it allows researchers to gain a more comprehensive understanding through the combination of numerical data and narrative data (Creswell & Clark, 2017). A qualitative approach is used to explore the perceptions, experiences, and expectations of teachers and students related to

science learning and the use of local culture-based media. Meanwhile, a quantitative approach is used to objectively describe students' reading interest level and science literacy through scores and percentage of questionnaire results and science literacy tests.

This study did not involve a direct learning intervention, so it did not require experimental treatment. All data collection procedures are carried out by paying attention to the ethical principles of educational research, including the school's approval and the confidentiality of the respondents' identities.

The research data consists of qualitative data and quantitative data. Qualitative data in the form of learning observation results, field notes, as well as the results of interviews and discussions with classroom teachers. Quantitative data is in the form of scores of reading interest questionnaire results and learning media needs, as well as the results of students' science literacy tests on human digestive system materials.

The main data sources in this study are elementary school grade V students as potential users of *Big Book media*, as well as grade V teachers as key informants who have direct experience in learning human digestive system materials. The research was carried out in four public elementary schools in Muruk Rian District, Tana Tidung Regency, North Kalimantan, namely SDN 004 Tana Tidung, SDN 005 Tana Tidung, SDN 016 Tana Tidung, and SDN 024 Tana Tidung. The number of student respondents was 27 people, while the teacher informants amounted to 4 people. The selection of the location and subject of the study was based on the consideration of the limited availability of contextual reading materials and the strong characteristics of local culture in the region.

Data collection is carried out through several complementary techniques. First, the collection process goes through the initial observation stage, which aims to identify the learning conditions of the human digestive system material in the classroom, the availability of literacy facilities, and students' reading behavior during the learning process. Second, a closed questionnaire was distributed to obtain quantitative data on the level of students' reading interest, the availability of literacy media in the school environment, and their preference for interesting and easy-to-understand reading material formats. Third, the provision of a science literacy test designed to measure students' conceptual understanding and scientific reasoning abilities on the material of the human digestive system, as a basis for assessing the readiness and need for the development *of a Big Book* with ethnoscience content.

The instruments used in this study consist of several types that are systematically designed in accordance with the purpose of data collection and the characteristics of the variables measured. The first instrument is a closed questionnaire with a Likert scale, which functions to measure the level of students' reading interest, the availability of learning media, and the need for learning based on the local context. The second instrument is in the form of a science literacy test which is prepared based on competency indicators from three main dimensions, namely the dimension of scientific knowledge, scientific reasoning, and the application of science concepts in daily life, so that the results can provide a comprehensive picture of the science literacy abilities of elementary school students.

Data analysis is carried out in an integrated manner by combining quantitative and qualitative analysis. Quantitative data from science literacy questionnaires and tests were analyzed using descriptive statistics, including the calculation of scores, average scores, percentages, and category groupings. This analysis aims to describe the level of reading interest, science literacy, and students' needs for *Big Book learning media* with ethnoscience content.

Qualitative data from observation and discussion with teachers were analyzed through the stages of data reduction, data presentation, and thematic conclusion drawn. The qualitative analysis focused on identifying key themes, such as contextual learning needs, barriers to the development of science literacy, and the views of teachers and students on the integration of local cultures in science learning. The results of quantitative and qualitative analysis are then synthesized to be the basis for determining the urgency and need for the development *of a Big Book* with ethnoscience content at the next stage of research.

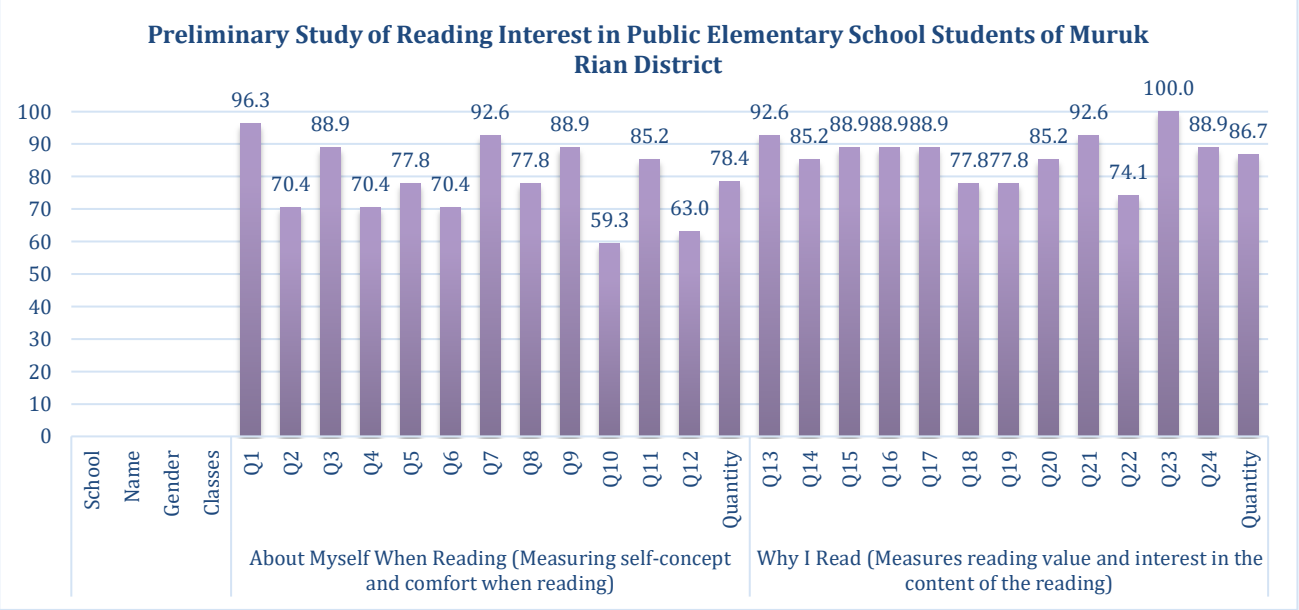
RESULT AND DISCUSSION

Results

Students' Interest in Reading

This sub-finding measures the level of reading interest of elementary school students which consists of two main dimensions: (1) self-concept and comfort when reading and (2) reading value and interest in reading content. These two dimensions were measured through a closed questionnaire with 24 statements. The focus of the research was to assess the extent to which grade V students at SDN in Muruk Rian District had a positive perception of reading activities and found meaning in these activities (see Figure 1).

Figure 1. Results of Reading Interest in Elementary School Students in MuruK Rian District

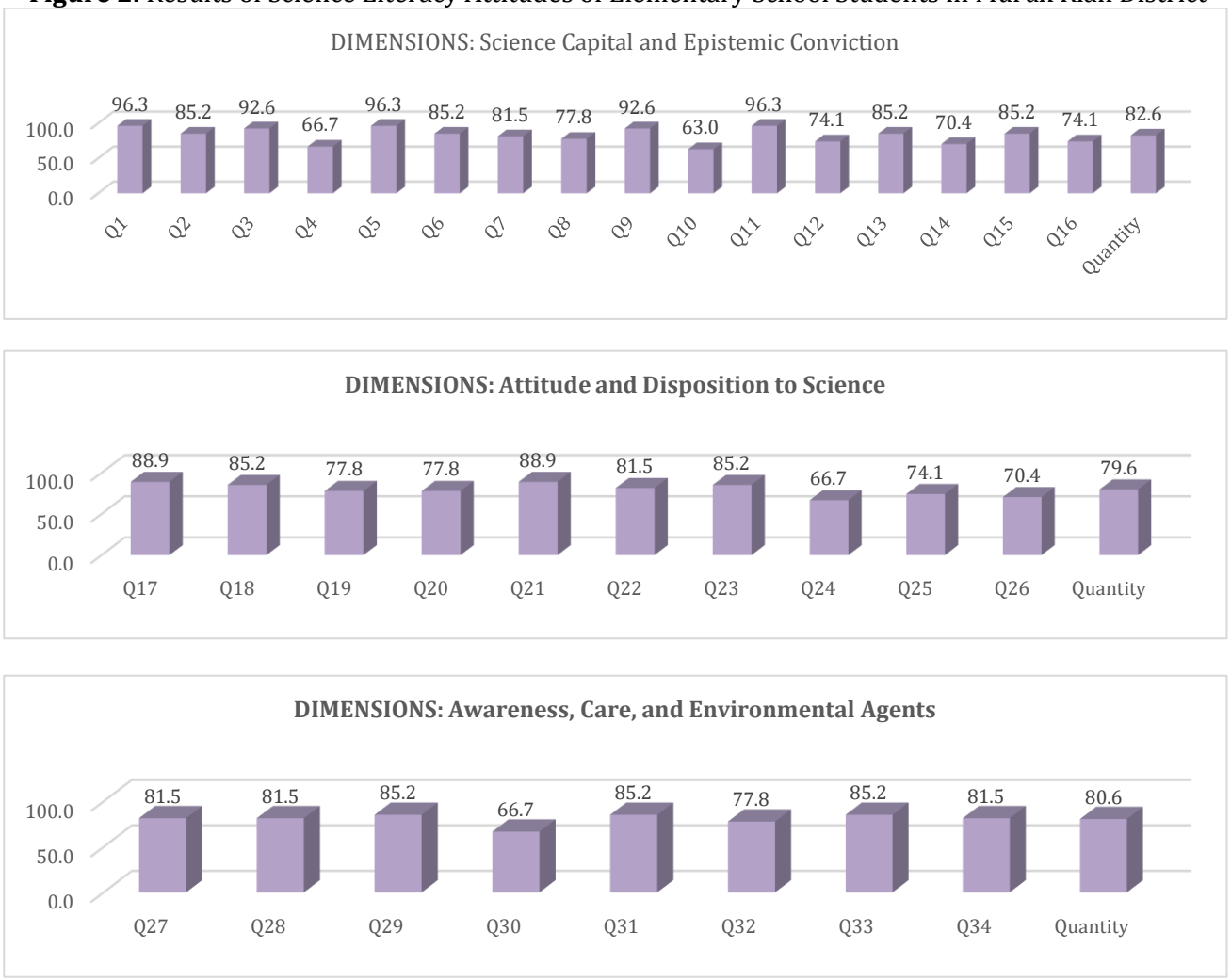


Most students showed a positive level of comfort and self-concept when reading, with the highest percentages in Q1 (96.3%), Q3&Q9 (88.9%), and Q7 (92.6%). However, there are some indicators that are still quite low, such as Q10 (59.3%) and Q12 (63.0%), which can indicate a lack of confidence or a lack of fun reading experience. The average overall score for this section is above 78.4%, indicating that students are generally comfortable reading, but there are still certain psychological/environmental challenges that hinder some students. The average score of all questions in reading scores and interest in reading content was quite high, with most of them above 86.7%, even Q23 reaching 100%. High scores were also seen in Q13 and Q21 (92.6% each), which shows that students highly value reading activities and are interested in the content of reading. Only one indicator declined, namely Q22 (74.1%), which was still relatively high but showed challenges in maintaining interest or understanding of certain readings.

Student Science Literacy Attitude Test

The attitude of science literacy in this study is interpreted as the tendency or disposition of students towards science and its application in daily life. This attitude includes three main dimensions, namely: (1) Science capital and epistemic beliefs, namely, students' views on the importance of science and the way science is formed; (2) Attitude and disposition towards science, namely, students' interest, motivation, and enthusiasm in learning science; and (3) Environmental awareness, concern, and agents, i.e., the extent to which students demonstrate real awareness and action on environmental issues (see Figure 2). This data was obtained through the distribution of questionnaires to grade V students, through a closed questionnaire with 34 statements.

Figure 2. Results of Science Literacy Attitudes of Elementary School Students in Muruk Rian District



Science Capital and Epistemic Beliefs (Q1–Q16) The highest scores were seen in Q1, Q5, and Q11 at 96.3%, indicating that students have a high interest in science and believe in the importance of science. The lowest scores were in Q4 (66.7%) and Q10 (63.0%) which indicated the existence of doubts or lack of understanding of students about the scientific process and the formation of scientific knowledge.

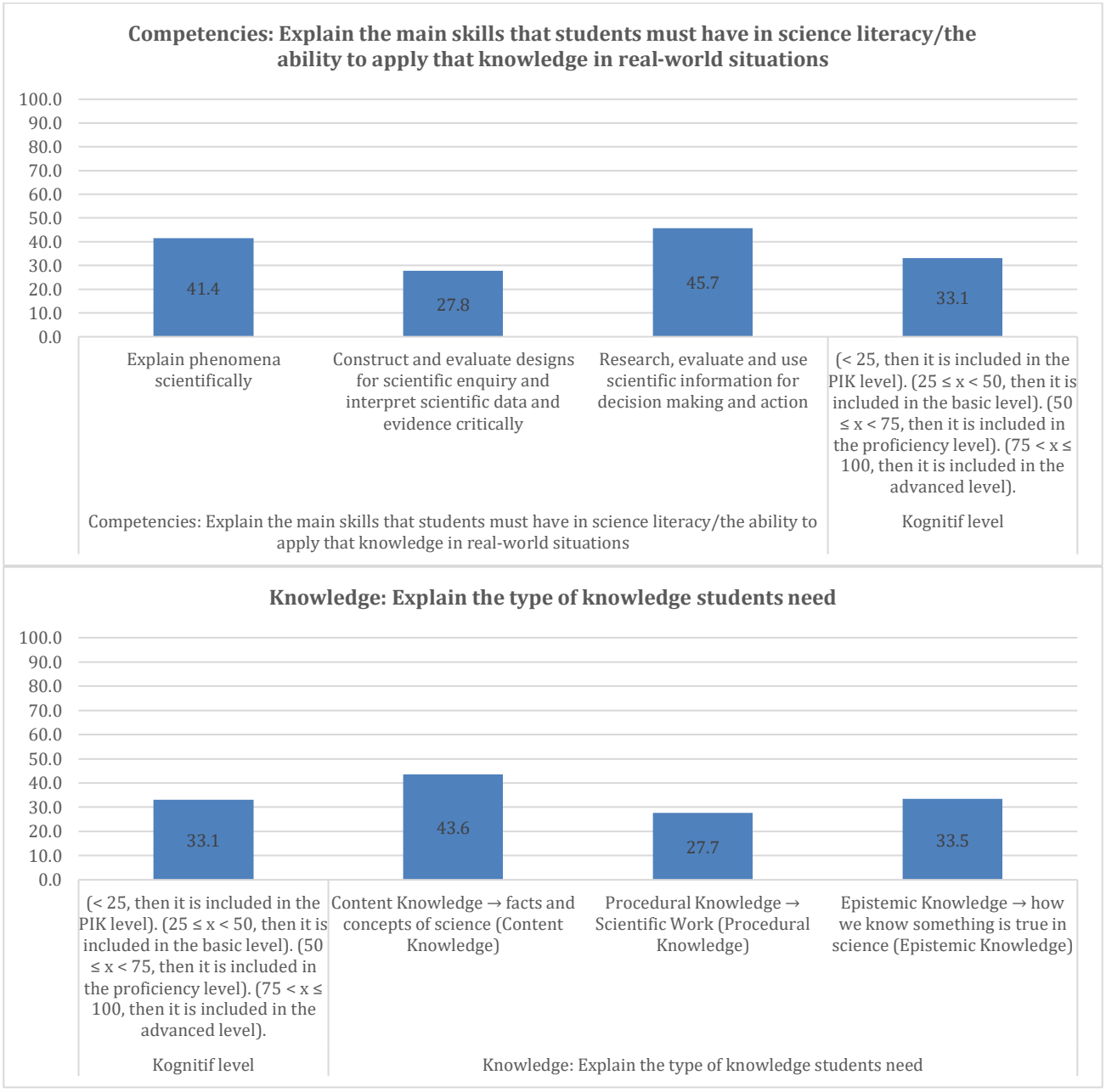
Attitudes and Dispositions towards Science (Q17–Q26) Most scores were above 80%, with Q17 and Q21 reaching 88.9%, reflecting a positive attitude and high interest in science lessons. Some scores such as Q24 (66.7%) indicate that there are challenges in maintaining motivation or confidence in understanding science.

Environmental Awareness, Concern and Agents (Q27–Q34) Overall, scores were in the category of being quite high, with peaks at Q29, Q31 and Q33 (85.2%), indicating that students have a high awareness of the importance of the environment. Lower scores were seen in Q30 (66.7%), which indicates a lack of empowerment or opportunities for students to play an active role as agents of environmental change.

Students' Science Literacy Cognitive Test

The cognitive test of science literacy in this study is defined as the ability of students to understand, apply, and evaluate scientific knowledge which includes two main aspects: competencies and knowledge. Competency aspects include the ability to explain phenomena scientifically, design investigations, and use scientific evidence for decision-making (see Figure 3). The test aims to measure the extent to which students can apply science literacy not only theoretically, but also through contextual scientific actions in their learning environment.

Figure 3. Results of Science Literacy Cognitive Test for Elementary School Students in Muruk Rian District



Competencies The results of the analysis show that the ability to research, evaluate, and use scientific information for decision-making obtained the highest score with a percentage of about 46%, which is categorized at the proficiency level. Furthermore, the ability to explain phenomena scientifically is also at the proficient level with a percentage of around 41%. Meanwhile, the ability to construct and evaluate scientific inquiry designs obtained the lowest score, at around 28%, which is still at the basic level. Overall, the average science literacy competency of students shows a tendency to be quite good at applying science concepts to solve simple problems, but still faces difficulties in designing and evaluating experiments critically and systematically.

Knowledge The results of the analysis on the dimension of scientific knowledge show that content knowledge, which includes mastery of scientific facts and concepts, is the strongest aspect with the highest score percentage of around 44%, which is classified as proficient level. In contrast, procedural knowledge, which deals with understanding the steps of scientific work, shows the lowest score, which is around 28%, and is at the basic level. As for epistemic knowledge, which is an understanding of the scientific method and basis in obtaining the truth

of scientific knowledge, it is in the range of basic level to proficiency with a score of around 33%. These findings indicate that students are more proficient in conceptual aspects than procedural and epistemic aspects in the context of science literacy.

Student Learning Needs Analysis

The analysis of student learning needs in this study is interpreted as a process of identifying the real needs of students in learning Natural and Social Sciences (IPAS), especially in the *material of the human digestive system*. This need includes four main aspects, namely the need for learning media, the need to strengthen the material, the need to increase reading interest, and the need to strengthen science literacy (see Figure 4).

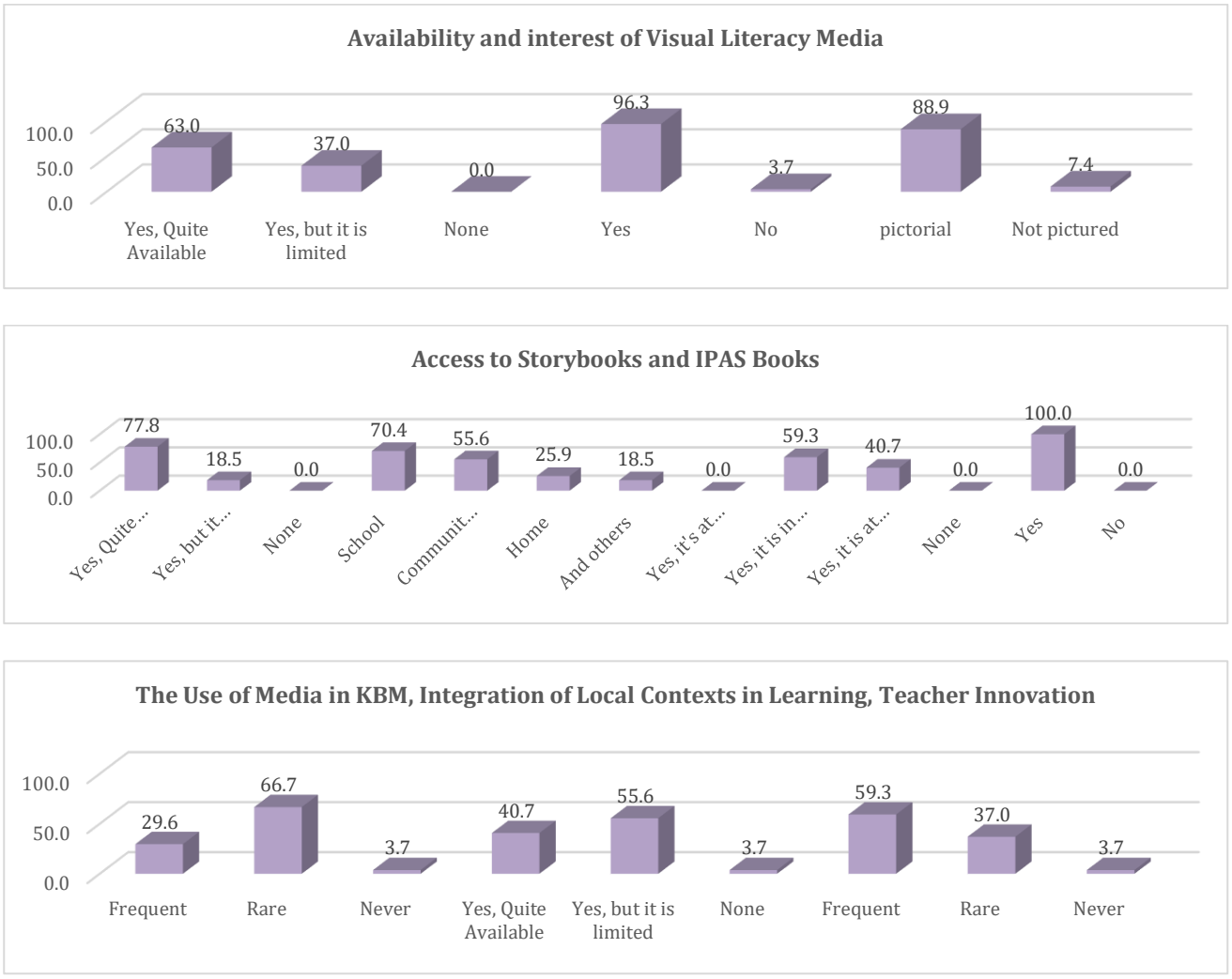
Figure 4. Results of Analysis of the Needs of Elementary School Students in Muruk Rian District

The results of the analysis of students' learning needs show that most students need learning media that is more interesting and relevant to their lives. As many as 78.9% of students stated the need for *a Big Book* containing ethnoscience as a visual medium that is able to connect science concepts with the local cultural context. The material of the human digestive system is also considered quite abstract, so that 78.5% of students need media that helps understand concretely and funly. In addition, students' interest in reading is still relatively low, reflected in 88.1% who expect story reading materials that are close to their experience. Meanwhile, 74.8% of students need to strengthen science literacy, especially in understanding and applying scientific concepts in daily life.

Observation of Facilities and Media for Analyzing Student Needs

This sub-finding focuses on the real condition of learning facilities and media, especially the availability, use, and relevance of visual and contextual-based media in elementary schools in the Muruk Rian District area. A needs analysis was carried out to find out the extent to which learning media, especially picture books and IPAS reading materials with local contexts, can support the improvement of students' interest in reading and science literacy (see Figure 5).

Figure 5. Results of Observation of Facilities and Media for Analyzing the Needs of Elementary School Students in MuruK Rian District



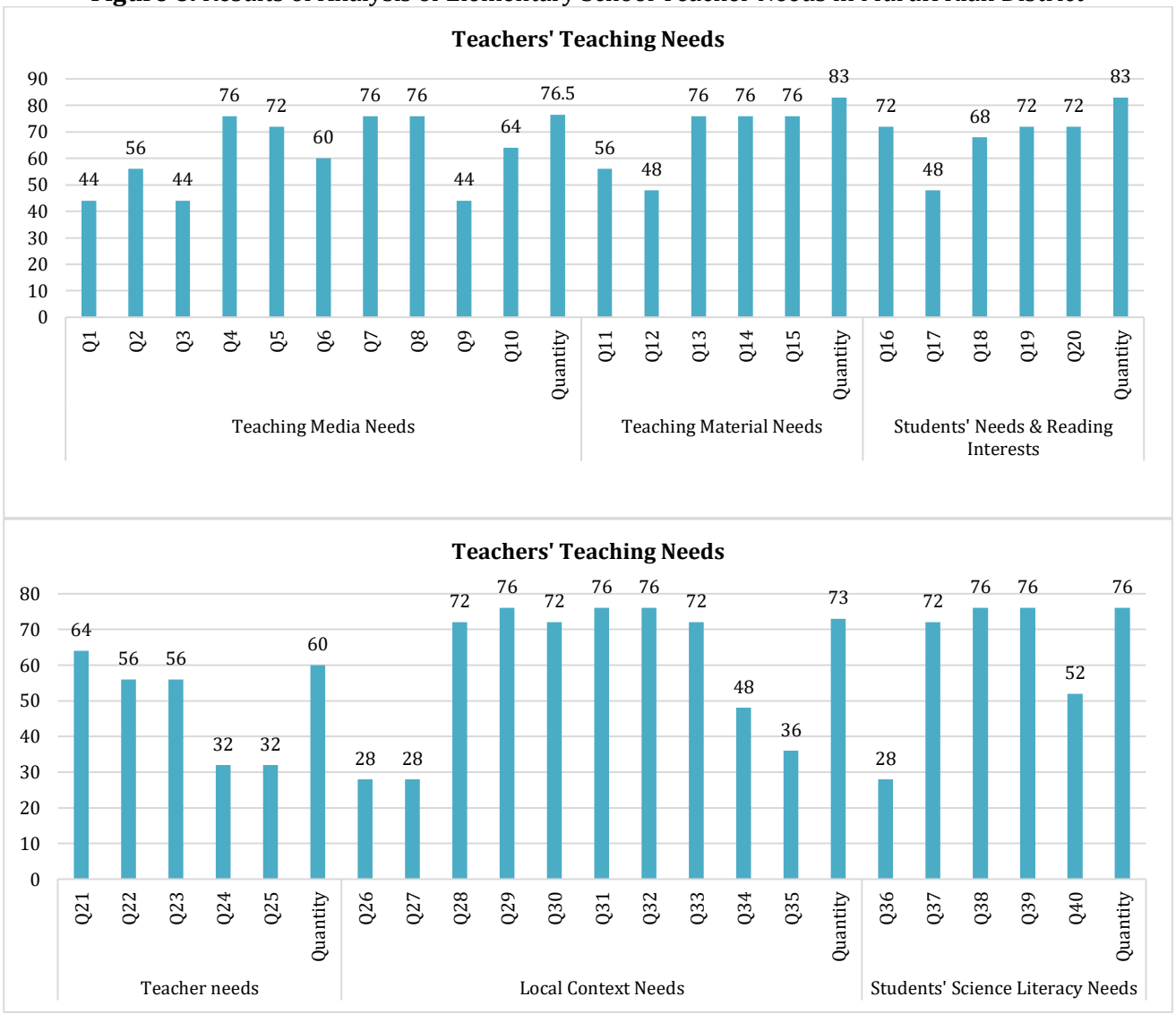
Availability and Interest in Visual Literacy Media 63% of students stated that pictorial media is quite available, while 37% say it is only available on a limited basis. 96.3% of students like to read picture storybooks. The majority of students (88.9%) are more interested in picture books than non-picture books. Access to Storybooks and IPAS Books 77.8% stated that libraries provide storybooks/IPAS, but 18.5% are only available for a limited time. Books are most accessed in schools (70.4%), followed by TBM (55.6%), and homes (25.9%). As many as 59.3% of students said storybooks/IPAS were only available at school, while 40.7% were available at home or school. Interestingly, 100% of students stated that they would like to read if books about life in their hometown are available.

Use of Media in Teaching and Learning Activities 66.7% of students stated that teachers rarely use visual media in learning. However, only 29.6% stated that teachers use visual media regularly (often). Integration of Local Context in Learning 55.6% of students stated that there are teaching aids/materials that are integrated with local contexts, although they are still limited. Only 40.7% stated that it was sufficiently available. Teacher Innovation 59.3% of students stated that their teachers often develop or modify teaching media. And 37% said it was rarely done.

Teacher Teaching Needs Analysis

These sub-findings examine teachers' needs for contextual media, materials, and learning approaches and support the development of students' reading interest and science literacy. The focus is on how elementary school teachers in Muruk Rian District perceive the availability of teaching media, the relevance of IPAS materials, and the importance of integrating local values (ethnoscience) in learning (see Figure 6).

Figure 6. Results of Analysis of Elementary School Teacher Needs in MuruK Rian District



Teaching Media Needs 76.5% Elementary School Teachers urgently need visual and concrete teaching media, such as *Big Books*, thematic images, teaching aids, and IPAS-based media. The high score shows that teachers not only need media, but also adequate variety and availability. Teaching Material Needs 83.0% of teachers feel that the teaching materials of IPAS are not in-depth and contextual enough. Students' Needs & Reading Interest 83.0% Teachers feel that students are still less interested in reading, especially in the field of Social Studies. Teacher Needs 60.0% Although students show interest in science, their ability to understand and apply scientific concepts still needs to be improved. Need for Local Context 73.0% Despite being in a rich area of culture and nature, teachers have not made much use of local wisdom (ethnoscience) in learning. Science Literacy Needs 76.0% Teachers are aware of the importance of students' science literacy, but still have difficulties in experiment-based and observation-based learning methods. This need shows the need for learning media that encourages scientific thinking skills from an early age.

DISCUSSIONS

Students' Interest in Reading

The findings show that students' reading interest is in the high category (≥78%), which means that students are quite comfortable with reading activities. This is in line with (Sandy & Fidian, 2022) that reading comfort is directly correlated with student involvement in literacy activities, especially in the elementary school context. However, low scores in Q10 and Q12 indicate emotional barriers and uneven reading experiences. As explained (Pelletier *et al.*, 2024), the learning environment and teacher support greatly affect reading confidence. Thus, reading interest is not only influenced by the ability, but also the emotional experience of students when reading.

In terms of reading scores and interest in the content of reading, a high score (≥86.7%) indicates that students appreciate reading activities and like reading that is relevant to their lives. This supports the view (Locher et al., 2019) that reading material that is close to students' experiences can increase reading interest. The Q23 score (100%) indicates a strong preference for illustrated or storytelling readings, while the decline in Q22 indicates that interest in reading still needs to be stimulated through engaging and meaningful media.

The implication is that learning media should not only be visually appealing, but also have a storyline and context that is close to students' lives. *The ethnoscience Big Book* is relevant because it combines large illustrations, simple language, and local cultural content. This is in accordance with (Muzdalifah, 2022) which states that culture-based media can increase students' emotional attachment to the text, so that the reading experience becomes more meaningful.

Overall, high but uneven reading interest scores indicate differences in literacy experience between students, influenced by reading access, reading habits at home, and teacher support. Rokmanah & Andriana, (2024) emphasized that reading interest is influenced by the literacy ecosystem, not just learning in the classroom. Therefore, the development of *the ethnoscience Big Book* is not just the provision of media, but a strategy to build a sustainable reading interest through local culture that is close to the lives of students in rural schools.

Student Science Literacy Attitude Test

The findings on science capital and epistemic beliefs show that most students have a positive interest and outlook on science, as evidenced by the high scores in Q1, Q5, and Q11. This finding is in line with (Muliastrini, 2025) who states that positive attitudes arise when science is considered relevant to life. However, lower scores in Q4 and Q10 indicate that students' understanding of how scientific knowledge is constructed is not yet strong. This is in accordance with the view of Carlone *et al.,* (2014) that epistemic understanding requires real inquiry experience, not just memorization. Therefore, learning needs to emphasize investigative activities so that students understand the scientific process in its entirety.

In the dimension of attitude and disposition towards science, high scores in Q17 and Q21 indicate that students are enthusiastic about science, but the decline in Q24 shows that their confidence has not stabilized. Tae *et al.,* (2019) explain that confidence is influenced by learning experience and classroom atmosphere. If learning focuses too much on the end result, students can feel depressed. *Big Book* Ethnoscience that is based on stories and real-life contexts has the potential to create a more comfortable learning atmosphere and build student confidence.

On the dimensions of awareness, concern, and environmental agents, high scores on Q29, Q31, and Q33 show students understand the importance of protecting the environment. However, the low score in Q30 shows that they have not felt capable of engaging in real action. Rahmatika *et al.,* (2025) emphasized that environmental empowerment emerges if students get practical opportunities and school support. This condition shows that awareness already exists, but the space for action is still limited due to the lack of environmental facilities and activities.

Thus, *the Big Book* of Ethnoscience not only serves as a reading medium, but also as a learning tool that connects science with local culture and everyday experiences. This media can

strengthen scientific understanding, foster positive attitudes, and build environmental empowerment of students. These findings provide direction that learning materials need to be designed according to the psychological, cultural, and social conditions of students in rural areas.

Students' Science Literacy Cognitive Test

Findings on science literacy competencies show that students are sufficiently capable of explaining scientific phenomena and using evidence in decision-making, but the ability to design and evaluate scientific inquiry is still at a basic level. This is in line with Schiefer *et al.,* (2021) who stated that elementary school students generally have an easier time mastering declarative knowledge than procedural knowledge that requires abstract reasoning and investigative experience. This condition shows that learning is still centered on teachers and memorization of concepts, not inquiry-based learning that provides room for exploration.

In the aspect of scientific knowledge, students are stronger in mastering concepts than procedural and epistemic knowledge. These findings are in line with Bukhari *et al.,* (2023) who explain that conceptual understanding can be formed through regular learning, while procedural and epistemic understanding require hands-on experience such as experimentation and evidence-based discussions. The lack of scientific practice makes students not used to building arguments and critically assessing information.

Overall, the results of cognitive tests show a gap between the demands of the science literacy curriculum and the implementation of learning in the classroom. This gap not only affects students' scientific abilities, but also their confidence in making evidence-based decisions. Therefore, contextual learning media such as the *Ethnosains Big Book* is needed that connects local cultural stories with scientific exploration and simple practical activities.

Student Learning Needs Analysis

The findings of the needs analysis show that students need visual, contextual, and easy-to-understand learning media, especially in the material of the human digestive system. The percentage of media needs of 78.9% shows that the delivery of material so far has not been enough to support students' visual understanding. This is in line with Wahidin, (2025) who stated that visual media helps students understand abstract concepts through long-term memory processing. Thus, *Big Books* with ethnoscience content can be a narrative-visual medium that helps students connect science concepts with everyday experiences.

The need to strengthen the digestive system material by 78.5% shows that students need a more concrete learning approach. This is in accordance with Hulwah & Suriani, (2025) who states that local context-based learning strengthens the understanding of concepts because students can see their relevance in real life. In the context of Muruk Rian, local eating and food habits can be used as an example to explain the digestive process. In other words, the ethnoscience approach enriches understanding while increasing students' cultural appreciation.

Students' reading interest is still low (88.1% needs improvement) has an effect on overall science literacy ability. Reading interest is not only related to reading habits, but also the ability to understand and evaluate scientific information. This is in accordance with (Rif'ah, (2022) which states that low interest in reading has an impact on weak scientific reasoning. Therefore, *Big Books* with stories and illustrations that are close to students' lives can be an interesting means to encourage reading habits.

The need to strengthen science literacy by 74.8% shows that students' scientific skills have not developed optimally even though their interest in science is quite good. This shows that there is a gap between interest in learning and the ability to understand scientific concepts. According to Parisu *et al.,* (2025), science literacy develops through exploration and hands-on experience. In this case, *the Big Book* of ethnoscience not only functions as a reading medium, but also as a trigger for inquiry and discussion.

Observation of Facilities and Media for Analyzing Student Needs

The availability of visual media such as picture storybooks is already available in schools, but the number is still limited. As many as 63% of students stated that pictorial media is quite available, while 37% considered it still lacking. This condition is in line with Paranoan *et al.,* (2024) who stated that schools in non-urban areas often lack interesting literacy media. Therefore, *Big Books* containing ethnoscience have the potential to become a more contextual and interesting visual media for students.

Access to science books and storybooks is more dependent on school libraries, with 77.8% of students reading books at school and only a small percentage having access at home. This is in accordance with Putri *et al.,* (2025) who stated that the literacy culture at home is still weak in rural areas. Interestingly, all students expressed interest in reading books related to hometown life, showing that teaching materials based on local culture can increase reading interest.

The use of visual media in learning by teachers is still low, as can be seen from 66.7% of students who stated that teachers rarely use visual media. This condition reflects learning that still focuses on verbal explanations. According to the findings of Dongoran *et al.*, (2025), the limitations of training make teachers tend to use the lecture method. This shows the need for support for teachers in the development and use of learning media based on local contexts.

Teacher Teaching Needs Analysis

The findings show that 76.5% of teachers urgently need visual and concrete teaching media, especially *Big Books*, illustrated media, and IPAS teaching aids. This is in line with research that confirms that visual media helps build students' initial understanding through a multisensory learning experience (Lestari & Suriani, 2025). The gap between teacher needs and media availability shows that support for facilities in non-urban areas is still limited. Therefore, the development of *a Big Book* with ethnoscience content is a relevant and urgent solution.

The need for more in-depth and contextual IPAS teaching materials is seen in 83.0% of teachers, because the available package books are not yet able to relate learning to the local reality of students. The integration of local contexts has been shown to improve students' understanding and engagement through their cultural and environmental experiences (Septina *et al.,* 2025). The unfulfillment of these needs results in learning tending to be abstract and text-centered.

Students' reading interest in IPAS material was rated low by 83.0% of teachers, even though curiosity about environmental phenomena was quite high. The mismatch between the teaching materials and the psychopedagogical needs of students is the main cause of this condition. Visual narrative media such as *Big Book* is able to increase interest in reading because it presents science concepts in the form of contextual and easy-to-understand stories (Gisna & Nurulaeni, 2024). The role *of Big Book* here is to connect everyday experiences with scientific concepts.

Teachers' awareness of the importance of science literacy reached 76.0%, but they experienced obstacles in implementing experiment-based and observation-based learning due to limited facilities and practice examples. This condition shows the existence of a gap in professional support, not a lack of willingness to teach. The development of science literacy will be more effective if learning media encourages simple scientific inquiry that is close to students' lives (Lorenza, 2025). *Big Books* containing ethnoscience can be a trigger for discussions, observations, and exploratory activities based on the local environment.

This study has limitations in the scope of location which is limited to elementary schools in Muruk Rian District, so the results cannot be generalized to areas with different socio-cultural characteristics. Furthermore, the variety of informants is still limited, especially in terms of gender and age, both in terms of students and teachers. For this reason, further research is strongly recommended using survey methods or *mixed-methods* in more diverse regions and populations to obtain a comprehensive picture of the needs and effectiveness of ethnoscience media in various primary education contexts. Further research also needs to consider the

dimensions of gender, age, and socio-cultural background so that learning media development policies can be prepared more completely. Thus, the results of this research can be the initial foundation for locality-based education policies, which place students and their cultures at the center of learning a small but significant step towards a characterful, contextual, and globally competitive education.

CONCLUSION

The results of the study show that the learning of digestive system materials at SDN Muruk Rian District still faces challenges in terms of reading interest, science literacy, and the limitations of contextual visual media. Students actually have a high interest in illustrated texts, but the availability of media relevant to their environment is still low. Therefore, the Big Book containing ethnoscience has the potential to be an alternative media that can connect the concept of science in the material of the digestive system with local cultural experiences, while strengthening understanding and belonging to the surrounding environment.

Conceptually, the results of this study confirm the importance of a local culture-based science literacy approach (ethnoscience) in learning digestive system materials in primary education. The integration of cultural context into the learning of digestive system material not only enriches the content of the curriculum, but also strengthens students' identity and scientific awareness of the surrounding environment. From the empirical side, this study proves that the use of attractive and local visual media such as Big Books is able to overcome low interest in reading and weak science literacy in digestive system materials. Systemically, these results confirm the need for an education policy that not only focuses on the provision of generic learning media, but also encourages the development of research-based contextual media and teacher participation. The synergy between teachers, culture, and science will create more relevant, fun, and impactful learning of digestive system materials for elementary school students in remote areas such as Muruk Rian.

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