HYDROGEN
JOURNAL OF CHEMISTRY EDUCATION
https://e-journal.undikma.ac.id/index.php/hydrogen/index

August 2026. 14(4)
e-ISSN: 2656-3061
p-ISSN: 2338-6487
pp. 791-805

Development of Supplementary Teaching Materials Based on Local Wisdom of The Sungai Kakap Community on Material Form, Substance, and Its Changes

Siti Mariyam, Hairida*, Eni Mayasari
Study Program of Chemistry Education, Faculty of Teacher Training and Education, Tanjungpura University, Pontianak, Indonesia
* Corresponding Author e-mail: hairida@fkip.untan.ac.id

Article History
Received: 14-07-2026
Revised: 24-08-2026
Published: 31-08-2026

Keywords: Supplementary Teaching Materials; Local Wisdom; The Sungai Kakap Community.

Abstract
Contextual learning is emphasized in the Independent Curriculum to help students connect scientific concepts with real-life situations. However, the integration of local wisdom into science learning materials at SMPN 1 Sungai Kakap remains limited, particularly for the topic of states of matter and their changes. This study aimed to develop supplementary science teaching materials based on the local wisdom of the Sungai Kakap community and to determine their feasibility and user responses. The study employed the ADDIE development model, limited to the analysis, design, and development stages. The participants consisted of six expert validators, including two material experts, two graphic experts, and two language experts; three science teachers; and 36 Grade VIII students. The students consisted of 12 students in a small-scale trial and 24 different students in a large-scale trial. Data were collected through interview guides, validation instruments, and teacher and student response questionnaires. The validation instruments used a four-point Likert scale, while the validity of the instruments was assessed using the Gregory coefficient. The feasibility of the developed teaching materials was evaluated based on material, graphical, and language aspects, while teacher and student responses were analyzed using percentage scores and interpreted according to predetermined criteria. The feasibility assessment resulted in percentages of 98.96% for the material aspect, 92.19% for the graphical aspect, and 98.33% for the language aspect, indicating a very feasible category. The teacher response was 92.59%, while the student responses were 91.25% in the small-scale trial and 95.21% in the large-scale trial, indicating very positive responses. These findings indicate that the developed supplementary science teaching materials based on Sungai Kakap local wisdom meet the predetermined feasibility criteria and received positive responses from teachers and students. Therefore, the materials are suitable for use as supplementary resources to support contextual science learning on states of matter and their changes.

How to cite: Mariyam, S., Hairida, & Mayasari, E. (2026). Development of Supplementary Teaching Materials Based on Local Wisdom of The Sungai Kakap Community on Material Form, Substance, and Its Changes. *Hydrogen: Jurnal Kependidikan Kimia*, *14*(4), 791-805. https://doi.org/10.33394/hjkk.v14i4.21916

https://doi.org/10.33394/hjkk.v14i4.21916

This is an open access article under the CC-BY SA License.

INTRODUCTION

The implementation of the Independent Curriculum in Indonesia emphasizes meaningful and contextual learning that enables students to connect scientific concepts with real-life situations. Based on the Decree of the Minister of Education, Culture, Research, and Technology of the Republic of Indonesia Number 56/M/2022 concerning guidelines for the implement-tation of the curriculum in the context of learning recovery, the Independent Curriculum was officially introduced in 2022 as a replacement for the 2013 Curriculum (Baidhawi et al., 2024). One of its key approaches is deep learning, which emphasizes higher-order thinking, conceptual under-standing, and the application of knowledge in everyday life (Mustaghfirin & Zaman, 2025).

Author's Copyright ©

However, the implementation of contextual science learning remains a challenge, particularly in connecting scientific concepts with students' everyday experiences and surrounding environment. At SMPN 1 Sungai Kakap, there is a need to strengthen the connection between science learning and the local context familiar to students. This represents an empirical gap between the contextual learning principles promoted by the Independent Curriculum and their implement-tation in the local learning environment. Integrating local wisdom into science learning can help address this gap by connecting scientific concepts with the knowledge, practices, and environmental conditions present in students' communities. Thus, the integration of local wisdom is relevant for making science learning at SMPN 1 Sungai Kakap more meaningful, contextual, and connected to students' real-life experiences, while supporting the development of conceptual understanding and higher-order thinking.

Deep learning is rooted in the experiential learning theory developed by David A. Kolb (1984), which emphasizes that the learning process occurs through hands-on experience involving reflection, conceptualization, and experimentation (Suyanto, 2025). The Merdeka Learning program basically provides autonomy in education, both for educational units, teachers, and students. This policy encourages the birth of various learning innovations and provides space for students to reflect on learning strategies independently and creatively. Thus, the diversity of ethnicities and cultures in Indonesia allows each student to find a way of learning that suits their individual characteristics (Ansori & Putridiyanti, 2022).

The implementation of the Independent Curriculum is also a strategic step in preserving local wisdom through education. This program is designed to produce quality education that is adaptive to the development of the times and technology (Kurniawan et al., 2023). The use of local wisdom as a learning resource is in line with Law Number 20 of 2003 concerning the National Education System, especially Chapter X Article 36 paragraph 3, which emphasizes that the curri-culum must pay attention to the diversity of regi-onal potential and the environment of students.

In its implementation, teachers have an important role in integrating local wisdom into science learning. This integration can be done by relating science concepts learned in class to activities and phenomena found in the environment around students.

Local wisdom is knowledge, values, and practices that are inherited from generation to generation in society (Putra & Azhar, 2024). Its existence reflects cultural identity as well as an alternative in responding to global challenges (Hartoyo & Hairida, 2024). The integration of local wisdom in learning not only expands students' learning experience in a cultural context, but also strengthens the relationship between the subject matter and real life and learning becomes more contextual because students not only gain theoretical knowledge from textbooks, but also understand the application of these concepts in daily life (Rosyidiana *et al*., 2023). In addition, this integration plays a role in preserving culture, strengthening identity, and fostering a sense of pride in local values (Perangin-Angin et al., 2023).

The use of local wisdom in learning also supports the application of the Deep Learning which emphasizes in-depth concept understanding, meaningful learning, and students' ability to connect knowledge with real context (Anjarwati *et al*., 2025). Thus, students not only memorize the concept of science, but are also able to analyze, apply, and reflect on the knowledge gained based on their experiences and the environment they are familiar with. Learning based on local wisdom can be carried out through a scientific approach, namely observing, questioning, trying, reasoning, and communicating, and supported by the use of varied and contextual teaching materials (Hasanah et al., 2022).

Teaching materials are one of the important components of learning and are an indicator of the success of the teaching and learning process. Teaching materials are systematically designed to be visually appealing and help students achieve expected competencies (Arif & Rukmi, 2020). One of the forms is supplementary teaching materials, which are additional materials that complement the main textbook and present the material more broadly or in-depth (Muhammad Furqan & Ari Sapto, 2023). The results of observations at SMPN 1 Sungai Kakap show that the material in the form of substances and their changes still faces various obstacles, such as the low learning outcomes of students who have not reached the KKM, the

limitations of teaching materials that have not been integrated with local wisdom, and the application of local wisdom has never been made in writing and systematically documented due to the limited time of teachers in compiling learning based on local wisdom.

The preliminary needs analysis through interviews with science teachers at SMPN 1 Sungai Kakap indicates that local wisdom in the surrounding community has not been optimally utilized in science learning, particularly in the material on states of matter and their changes. The interviews focused on the implementation of science learning, the use of local wisdom as a learning context, the teaching of states of matter and their changes, and the difficulties experienced by students in connecting scientific concepts with everyday phenomena.

The interview findings were documented and analyzed descriptively by identifying information related to the use of local wisdom, learning practices, and the need for contextual science learning. The findings show that science learning still primarily focuses on explaining concepts from textbooks without sufficiently relating them to community activities such as making palm sugar, processing salted fish, and burning coconut shells, which involve concepts of physical and chemical changes. Consequently, students have limited opportunities to understand how these concepts are applied in real-life situations, making learning less contextual and meaningful (Kusrianto et al., 2025; Dafrita et al., 2023; Larassati et al., 2025).

The findings further indicate that local knowledge practiced by the community for generations has not been adequately utilized by teachers and students as a source of science learning. In fact, various local wisdom practices contain scientific concepts that can serve as meaningful learning contexts closely related to students' lives. This is supported by research showing that the traditional process of making palm sugar in Lombok involves various scientific concepts, including changes in the states of matter, heat transfer, and chemical changes during the processing process (Rayis et al., 2024). Therefore, integrating local wisdom into science learning can help students connect scientific concepts with real phenomena encountered in their daily lives, making learning more contextual and meaningful. Furthermore, learning that does not integrate local wisdom, such as the process of making palm sugar, tends to remain theoretical and provides limited contextual learning experiences, whereas the integration of local wisdom can strengthen the connection between science concepts and students' everyday lives and support more meaningful understanding (Jannah et al., 2024). These findings highlight the need to utilize relevant local wisdom as a contextual learning resource for teaching states of matter and their changes at SMPN 1 Sungai Kakap.

The Sungai Kakap area has considerable coconut potential, with a land area of 17,340 hectares and coconut production reaching 20,732 tons per year, which provides significant potential as a contextual science learning resource (Artadewa et al., 2020). However, the results of interviews with students at SMPN 1 Sungai Kakap indicate that they are not yet aware that the abundance of coconut resources in their area and the various traditional processing activities are closely related to the science concepts learned at school. For students, activities such as producing brown sugar from coconut sap, virgin coconut oil (VCO), coconut shell charcoal, and salted fish are generally perceived only as community economic activities or their parents' occupations, rather than as scientific processes involving concepts such as mixtures, changes in states of matter, heating, combustion, evaporation, crystallization, fermentation, and food preservation.

Conse-quently, the potential of Sungai Kakap, which is rich in coconut resources and traditional community practices, has not been fully recognized as a contextual science learning resource that is closely connected to students' everyday lives. This condition indicates a gap between the richness of local wisdom in Sungai Kakap and students' understanding of its scientific relevance, causing science learning in the classroom to remain disconnected from the reality of the surrounding environment. In fact, these local contexts have considerable potential to make science learning more meaningful, contextual, and applicable to real-life situations.

Based on the field findings and previous studies, the novelty of this research lies in the development of supplementary science teaching materials that specifically integrate the local wisdom and community practices of Sungai Kakap into the topic of states of matter and their changes.

Previous studies have demonstrated the potential of local wisdom as a context for science learning; however, the use of local cultural and environmental resources in existing teaching materials remains limited, causing science learning to be relatively abstract and less connected to students' immediate surroundings (Ferdianto & Setiyani, 2018; Tinja et al., 2017; Imron & Shobirin, 2021).

In contrast, the research above specifically utilizes local practices found in the Sungai Kakap community, including the processing of coconut sap into brown sugar, the production of virgin coconut oil (VCO), coconut shell charcoal production, and salted fish processing. These practices are directly aligned with scientific concepts related to mixtures, changes in states of matter, heating, evaporation, crystallization, combustion, fermentation, and food preservation.

The novelty also lies in the pedagogical structure of the developed product, which presents local community practices as contextual examples for explaining scientific concepts rather than merely introducing local culture as supplementary information. This approach allows students to identify and interpret scientific phenomena within activities that are familiar to their community and daily lives.

Previous research has shown that local-wisdom-based learning can support students' conceptual understanding, environmental literacy, and creative and critical thinking by connecting learning with real contexts such as ethnobotanical practices and community livelihoods (Mahmud, 2023; Asmawati et al., 2025; Fahirah et al., 2025).

This study extends previous research by focusing on the specific local wisdom of Sungai Kakap and systematically connecting these practices with the topic of states of matter and their changes in a supplementary printed teaching material. The resulting product was subsequently evaluated through expert validation and teacher and student response tests to determine its validity and acceptability as a contextual science learning resource.

METHODS

Research Subject

This research was conducted at SMP Negeri 1 Sungai Kakap, West Kalimantan Province, involving 36 Grade VIII students from four classes during the 2024/2025 academic year. The four classes were selected because their average test scores were still below the expected average, indicating a need for improvement in science learning. The participants were selected based on their distribution across the four classes and their learning achievement. A small-scale trial involved 12 students, consisting of three students from each of the four classes. The 12 students consisted of 10 female and 2 male students.

A large-scale trial was subsequently conducted with 24 different students from the same four classes, consisting of six students from each class. The 24 students consisted of 9 female and 15 male students. Thus, the students who participated in the small-scale trial were different from those who participated in the large-scale trial. In addition to the student response tests, three science teachers participated in the teacher response test. The three teachers were science teachers who taught Grade VII students at SMPN 1 Sungai Kakap. The selection of students from the four classes was based on the relatively low average test scores of the classes, while the number of participants was determined according to the requirements of the small-scale and large-scale trials.

The research was conducted after obtaining permission from SMPN 1 Sungai Kakap. The participation of students and teachers was carried out within the scope of the school-approved research activities. No separate informed consent from students or their parents/guardians was obtained, and no formal ethical approval from an ethics committee was sought for this study.

Research Procedure

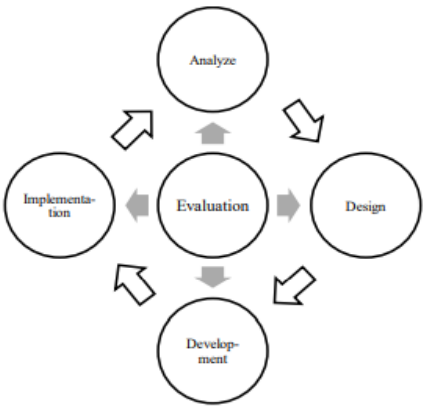


Figure 1. ADDIE Development Stages (Waruwu, 2024)

The research method used is development research (Research and Development) by using a

model approach that pays attention to the basic stages of media development design that is simple and easy to understand, namely the ADDIE model (Analyze, Design, Development, Implementation, and Evaluation) (Purnamasari, 2019). However, this study is only on *Analyze*, *Design*, and Development, the following development research procedure can be seen in Figure 1.

Analysis

At this stage, it is carried out to collect factual data related to problems through interviews and observations at schools. Interviews were conducted with science teachers and students of grades VII and VIII to find out the use of additional teaching materials in learning. Curriculum analysis is carried out by adjusting the Independent Curriculum to the learning outcomes of phase D of science, especially material on the form of substances and their changes which include the identification of the properties and characteristics of substances as well as differences in physical and chemical changes.

Design

The design stage aimed to systematically develop supplementary teaching materials based on the local wisdom of the Sungai Kakap community. At this stage, aoard was prepared to determine the sequence and content of the supplementary teaching materials in accordance with the learning objectives. The product was designed from the opening and main content to the closing section using the Canva application on mobile phones and laptops, with attention to the attractiveness and relevance of the supplementary teaching materials. In addition, validation instruments and questionnaires for the teacher and student response tests were prepared using a four-point Likert scale consisting of strongly disagree, disagree, agree, and strongly agree, scored from 1 to 4, respectively.

The validity of the research instruments was assessed by two validators consisting of one lecturer in Chemistry Education and one graduate of Chemistry Education. Instrument validity was analyzed using the Gregory content validity coefficient. The validation instruments for the material, graphical, and language aspects each consisted of nine items, while the teacher response instrument consisted of seven items and the student response instrument consisted of five items. Each item was assessed based on four aspects of the assessment criteria using a four-point rating scale. The Gregory coefficient was calculated using the following formula:

$$\text{Content Validity Coefficient} = \frac{D}{(A+B+C+D)} = \frac{4}{(0+0+0+4)} = 1$$

where A represents the number of items rated differently by both validators in the first category, B represents the number of items rated differently in the second category, C represents the number of items rated differently in the third category, and D represents the number of items on which both validators agreed in the same category. Based on the validation results, all items of the material, graphical, language, teacher response, and student response instruments obtained a Gregory coefficient of 1, calculated as **4/(0 + 0 + 0 + 4) = 1**. A coefficient of 1 indicates that all validators provided consistent judgments on the validity of the assessed instrument items. Based on the validity criteria, a coefficient greater than 0.81 is categorized as very high validity. Therefore, the research instruments were categorized as having very high validity and were considered suitable for use in the subsequent stages of the study (Retnawati, 2016/32).

Development

At this stage, science supplement teaching materials based on the local wisdom of the Sungai Kakap community were developed in accordance with the design that had been planned using *Microsoft Word* and *Canva*. The product is designed by containing material in its forms, substances and changes combined with elements of local wisdom, and equipped with attractive images and visual elements so as to produce relevant and contextual science supplement teaching materials. Furthermore, a validation test was carried out by experts who are competent in the field of chemistry and the development of learning media to assess the material, graphic, and language aspects. After obtaining input, the product is revised according to the validator's suggestions until it is declared valid. The next stage is a response test.

Science teachers and grade VII students of SMPN 1 Sungai Kakap went through small-scale

and large-scale tests to find out the response to the products developed. So the limitation of this research is that it is only up to the development stage and the response test of teachers and students is carried out, but it is not widely tested in the effectiveness test of the supplementary teaching materials.

Data Analysis

The developed supplementary science teaching materials were validated based on three aspects, namely material, graphical, and language aspects. The validation used a four-point Likert scale consisting of strongly agree (4), agree (3), disagree (2), and strongly disagree (1). Before being used in the study, the research instruments were validated by two validators. The data obtained in this study were analyzed using quantitative and descriptive qualitative techniques. Quanti-tative data were obtained from the scores given by the validators, science teachers, and students and were analyzed based on the predetermined assessment criteria. Quali-tative data were obtained from comments, suggestions, and responses provided by the validators, teachers, and students. These comments and suggestions were reviewed, grouped according to the material, graphical, language, and learning-related aspects, and used as a basis for identifying weaknesses and revising the supplementary teaching materials. Thus, the qualitative responses served to complement the quantitative results and guide improvements to the developed product.

The results of the validation test in the expert validation sheet were analyzed using a calculation formula. The formula used to calculate data from expert validators with the percentage formula:

$$p = \frac{f}{n} x\ 100\%$$

Description:
p = Percentage of data
f = Total score obtained
n = Maximum total score

The score of the validation assessment results from each expert determines the validity and feasibility of the supplement teaching material product based on local wisdom. The results of the percentage of data obtained are then interpreted in the table of validity level criteria presented in Table 1.

Table 1. Achievement Criteria Level

Score Range%	Remarks	Criteria
81 - 100	Highly Valid	Highly feasible
61 – 80	Applicable	Worthy
41 - 60	Less Applicable	Not eligible
21 - 40	Not Valid	Very less feasible

(Fatimah *et al*., 2025)

Response Test of Teachers and Student

The participants were selected using purposive sampling. The student participants were selected from four Grade VIII classes based on the relatively low average test scores of the classes. The small-scale trial involved 12 students, while the large-scale trial involved 24 different students from the same four classes. In addition, three science teachers who taught Grade VII participated in the teacher response test.

Data on teacher and student responses were collected using questionnaires. The questionnaires were administered after the participants had used or reviewed the developed supplementary teaching mate-rials. The questionnaire consisted of state-ments assessing participants' responses to the developed teaching materials using a four-point Likert scale: strongly agree (4), agree (3), disagree (2), and strongly disagree (1). The obtained scores were converted into percentages using the following formula:

$$p = \frac{f}{n} x\ 100\%$$

Description:
p = Percentage of data
f = Total score obtained
n = Maximum total score

Furthermore, the percentage of teacher and student responses can be interpreted into categories based on Table 2.

Table 2. Scores and Response Criteria of Teachers and Students

Score Range %	Remarks
81 – 100	Very Interesting
61 – 80	Interesting
41 - 60	Less Attractive
21 - 40	Not Interesting

(Fatimah *et al*., 2025)

RESULTS AND DISCUSSION

The product developed in this study was supplementary science teaching material based on the local wisdom of the Sungai Kakap community for the topic of states of matter and their changes. The teaching material was developed in the form of a B5-sized printed book

and was designed to provide additional learning resources that connect science concepts with local community practices. The development process consisted of the analysis, design, and development stages.

The expert validation focused on three aspects: material, graphical presentation, and language. The validation results indicated that the developed supplementary teaching materials met the predetermined validity criteria. The validators' comments and suggestions were used as a basis for revising the product, particularly in relation to the accuracy and presentation of the material, graphical appearance, and language clarity. These revisions were carried out before the teaching materials were tested with teachers and students.

Following the expert validation and revision process, the teaching materials were tested to obtain responses from teachers and students. The teacher and student response results were calculated using the percentage formula and interpreted according to the response criteria presented in Table 2. The response data were used to determine the practicality and attractiveness of the developed

At the analysis stage, interviews were conducted with science teachers at SMPN 1 Sungai Kakap who have implemented the Independent Curriculum. The results show that the learning of material in the form of substances and their changes has not been systematically associated with local wisdom, such as the process of making brown sugar. Teachers still rely on package books and internet resources, while locally-based contextual printed teaching materials are not yet available. Learning also tends to use lecture methods so that student involvement is less than optimal. Although teachers have given simple projects based on local potential, such as making coconut milk ice cream, their implementation has not been documented in the form of written teaching materials. The curriculum analysis is focused on CP Science Phase D of the Independent Curriculum, especially the ability to identify the properties of substances and distinguish physical and chemical changes as the basis for determining the purpose and preparation of storyboards for teaching materials.

The design stage is carried out by designing teaching materials that are relevant to learning outcomes and integrated with local wisdom of the Sungai Kakap. The preparation includes *covers* with colors and illustrations typical of the Sungai Kakap, identity, learning objectives, concept maps, equipped with learning outcomes, learning objectives, brief materials, integration of local wisdom of the Sungai Kakap Community, namely the process of making brown sugar, VCO coconut oil, coconut shell charcoal, and salted fish, then the process of designing images, a brief description of the local wisdom of the Sungai Kakap, and a glimpse of information, Student activities, summaries, glossaries, and reference lists using the Canva app with an attractive look.

At this stage, a validation instrument was also prepared for material, graphic, and language experts in the form of a 4-point Likert scale questionnaire, to assess the feasibility of content, presentation, and language and the instrument was first tested for validity to two validators. This design design is a reference in the development stage to produce *a* storyboard of science supplement teaching materials that is ready to be validated after which the response is tested in a limited manner.

The development stage produces science supplement teaching materials that combine materials of forms, substances, and changes with the local wisdom of the people of Sungai Kakap. Furthermore, a validity test of expert instruments was carried out, as well as a questionnaire of teacher and student responses to ensure the validity of the instrument items and was categorized as high validity suitable for use.

After the research instruments were confirmed to be valid, a feasibility assessment of the developed supplementary science teaching materials was conducted by six experts, consisting of two material experts, two graphic experts, and two language experts. The material and graphic assessments were conducted by the same two experts, namely Lukman Hadi, M.Pd., a lecturer at the Faculty of Teacher Training and Education, Universitas Tanjungpura, and Hamdil Mukhlishin, S.Pd., M.Pd., M.Si., M.Pd., a lecturer at Universitas Muhammadiyah Pontianak. Both validators have academic and professional experience in education, particularly in Chemistry Education, and were considered competent to assess both the material and graphical aspects of the developed teaching materials. The two language experts were selected

based on their expertise in Indonesian language education, including one lecturer in Indonesian Language Education at the Faculty of Teacher Training and Education, Universitas Tanjungpura, while the other language expert was selected based on relevant expertise in Indonesian language education.

Each validation instrument for the material consisted of ten items, graphical, and language aspects consisted of nine items and used a four-point Likert scale. The material assessment focused on the accuracy, relevance, and appropriateness of the science content, while the graphical assessment focused on the visual presentation and design of the teaching materials. The language assessment focused on the clarity, appropriateness, readability, and use of Indonesian language. The assessments from the two validators in each domain were compared to determine the feasibility of each aspect. The results of the validation assessment for the material, graphical, and language aspects are presented in table 3.

Table 3 . Percentage of Material, Graphic and Language Feasibility Test Assessment

Validation Aspect	Mean (%)	Category
Material	98,96	Very feasible
Graphic	92,19	Very feasible
Language	98,33	Very feasible

The validation results showed that the teaching materials for the science supplement had met the eligibility criteria with the category of "very feasible" in terms of material, graphics and language using the percentage calculation formula. The results of each feasibility assessment will be discussed in detail and in depth. The material validation test was carried out by 2 material experts, this validation included 3 aspects, namely aspects of material suitability, suitability with the local context, and content integration. After the calculation is completed, an average score of 98.96% is obtained and the percentage data per aspect can be seen in figure 2.

The results shown in the image show an average feasibility percentage of 100.00% in the Material Suitability aspect, 96.88% in the Local Context Suitability aspect and 100.00% in the Content Integration aspect. Thus, the results of the material feasibility test on science supplement teaching materials can be categorized as very feasible because they are in the range of 81% - 100% (Fatimah et al., 2025).

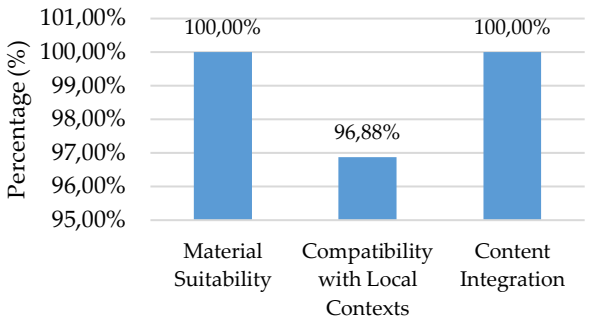


Figure 2. Material Feasibility Results Bar Chart

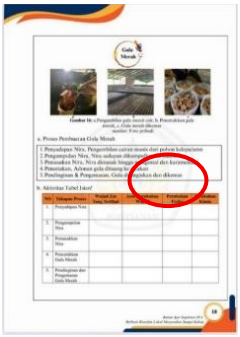
The material feasibility test consists of aspects of material suitability, suitability with the local context, and content integration. Thus, it can be concluded that the material in the science supplement teaching materials developed can be categorized as very feasible. In the aspect of the suitability of the material in the teaching materials, the science supplement gets 100.00% or in the category of very feasible, showing that the teaching material is in accordance with the learning outcomes and learning objectives.

Then in the aspect of conformity with the local context in the teaching materials of science supplements got 96.88% even though the score was slightly lower than the other two aspects, this result was still categorized as very feasible. However, there are suggestions and inputs from experts related to the local context presented, in the example of physical and chemical changes in the application of daily life in the Sungai Kakap community needs to be enlarged and the thickness of the text is reconsidered so that the concept of the material is easier to understand and also for information on the location of manufacture along with the image needs to be considered again and for the subtitle, In the filling instructions, it is necessary to add the contents of the column with a check mark to make it clear for students to answer the filling table and for the sample table of workmanship there are mistakes in the form of the substances involved and for the physics and chemical change columns it is better to separate, because in one process two changes can occur at once. The results of the improvement can be seen in table 4.

Furthermore, in the aspect of content integration in the teaching materials, the science supplement obtained a score of 100.00% which was also in the criteria of being very feasible and considered very attractive by the validator. The content of this science supplement teaching

material has provided examples of real images that can fill the shortcomings of the material that have not been conveyed in detail (Arif & Rukmi, 2020).

Table 4. Results of Improvement of Science Supplement Teaching Materials Based on Suggestions and Comments of Subject Matter Experts

Before Revision	After Revision
 In this section, it is necessary to enlarge the image and pay attention to the thickness of the text and give subtitles that are still included in the material of local wisdom typical of the Sungai Kakap.	 In this section, the image has been enlarged and given a subtitle to the material of local wisdom typical of the Sungai Kakap.
 In this section, the subtitle of the material needs to be moved and the image needs to be enlarged again so that it does not maximize the image space.	 In this section, there are no subtitles of material and images are clearer.
 In each table of activity stuffing has not been separated between the physics and chemical change columns.	 Added physics and chemical change columns to each activity table

The before and after display of improvements in science supplement teaching materials can be seen in the following table 4. The graphic validation test was also carried out by 2 experts, this validation includes 4 aspects, namely, graphic quality and display design, content suitability, format consistency, and visual quality. After the calculation was completed, the overall average score was 92.19% and the percentage data per aspect can be seen in the following figure 3.

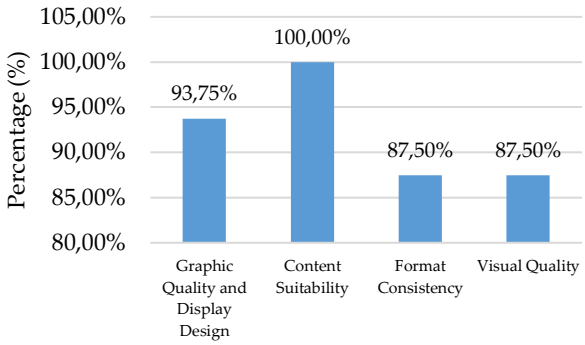


Figure 3. Graphic's Qualification Bar Chart

The results shown in the image above show the average percentage of feasibility per aspect, 93.75% in the aspect of Graphic Quality and Display Design, 100.00% in the aspect of Content Suitability, 87.50% in the aspect of Format Consistency, and 87.50% in the aspect of Visual Quality. Thus, the results of the graphic feasibility test on science supplement teaching materials can be categorized as very feasible because they are in the range of 81% - 100% (Fatimah et al., 2025).

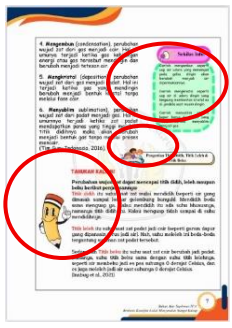
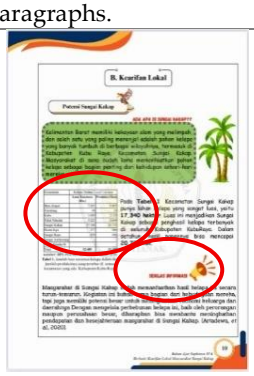
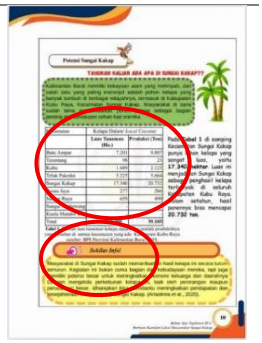
In terms of graphics quality and display design, it received a score of 93.75% with a very decent category. However, there are several suggestions and inputs related to the table of contents and the list of tables that are still located on the same page, the concept map display is enlarged to maximize the display space and so that the readability of the contents of the concept map is clearly visible, as well as the display of pencil images on the material presented is more adjusted to the material. The results of the improvement can be seen in table 5.

Then in the aspect of content suitability, a score of 100.00% or in the very feasible category. This shows that the content of the supplement teaching materials already contains elements of

inviting students to actively participate through activities in the science supplement teaching materials that support the understanding of the material. In addition, the score also indicates that the illustrations presented in the science supplement teaching materials are relevant and understandable and provide a real picture in learning. It can be said that the content of the teaching materials of the science supplement itself can encourage the active participation of students through activities ranging from seeing, observing, doing, to concluding (Anom & Aji, 2024).

Furthermore, in the aspect of format consistency, obtaining a score of 87.50% is still included in the very feasible category. There are suggestions and inputs related to the format that is not consistent in the division of the main material or only the quick part of the info is reconsidered so that the material to be presented is clearer and more structured. Suggestions for improvement can be seen in table 5. Then in the visual quality aspect, it obtained the same score in the previous aspect of 87.50% and is still included in the very feasible category. However, there are suggestions and inputs related to color combinations in the info box at a glance are still not uniform and the image presented is still next to the paragraph so that the visual appearance is not consistent, the colors in the material text are better presented in the text of the perpoint paragraph so that it looks more equal and clear. Suggestions for improvement can be seen in table 5.

Table 5. Results of Improvement of Science Supplement Teaching Materials Based on Suggestions and Comments of Graphic Experts

Before Revision	After Revision
	
In this part, the display of the pencil image does not match the content of the material presented so it does not connect with the content of the material.	He added images that match the material so as to add to the attractiveness of the content of the material.
	
The colorful appearance of the writing has not been replaced in the form of paragraph per point so that it does not look the same as the other paragraphs.	The display of the material has been changed colorless and into perpoints so that it is more clearly read by the reader.
	
This section has not been enlarged the reference table and for a quick view of the info has not been uniformly colored.	The table appearance has been clarified and the color of the info at a glance has been standardized.

So that overall the average feasibility score of 92.19% shows that the science supplement teaching materials developed are very feasible to be used as an alternative to additional teaching materials. The before and after display of improvements in science supplement teaching materials based on graphic feasibility results can be seen in the table 5.

The language aspect of the science supplement teaching materials was evaluated by two language experts. The evaluation covered five aspects: suitability of language conventions, language clarity, suitability for students' level of understanding, consistency of terminology, and language style. Based on the assessment, the teaching materials obtained an overall language-feasibility percentage of 98.33%, indicating a very feasible category. This result reflects the experts'

evaluation of the language quality of the developed teaching materials and should be distinguished from the linguistic quality of the present research manuscript. The percentage results for each language aspect are presented in Figure 4.

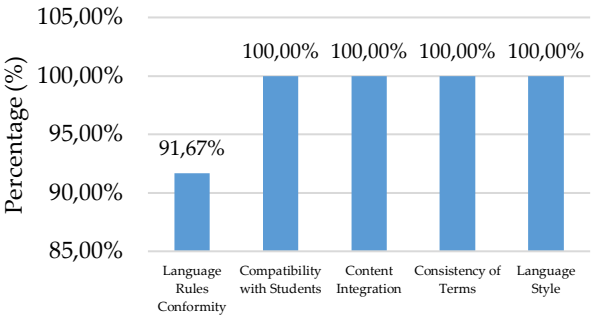


Figure 4. Language Eligibility Bar Chart

The results shown in the image above show the average percentage of language per aspect, 91.67% in the aspect of Language Rule Conformity, 100.00% in the aspect of Language Clarity, 100.00% in the aspect of Conformity with Students, 100.00% in the aspect of Terms Consistency, and 100.00% in the aspect of Language Style. Thus, the results of the graphic feasibility test on science supplement teaching materials can be categorized as very feasible because they are in the range of 81% - 100% (Fatimah et al., 2025).

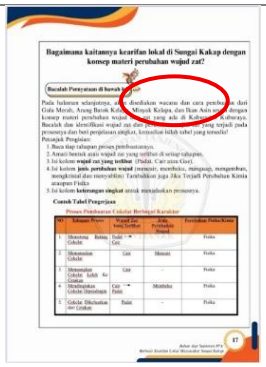
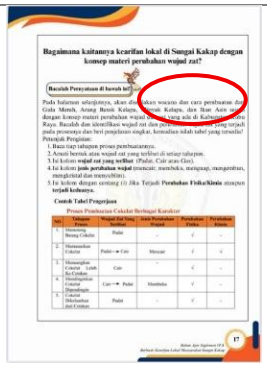
In the aspect of language suitability, it obtained a score of 91.67% with a very decent category. In this aspect, there are several suggestions and inputs related to the writing of the word "*Monserrat*" needs to be improved based on the missing letters, namely to be "*Montserrat*", the writing of the word "in the forging" for the material of the change in the form of the liquid substance needs to be corrected and not connected between words, namely to "placed", for the scientific word from the coconut which is written "*Coconus Nucifera Linn*" needs to be corrected because if the scientific word is wrong, then the error in the meaning of the word is "*Cocos Nucifera*" and the error in the writing of the word "Kuburaya" needs to be corrected based on the correct writing error of the province, which is to be "Kubu Raya". From this aspect, it shows that the use of spelling and punctuation in general still has some parts that are recommended to be improved to be more in accordance with the rules of the language. The results of the improvements can be seen in table 6.

Then in the aspect of language clarity, obtaining a score of 100.00% or a very feasible category shows that the presentation of the sentences presented is clear and does not cause double meaning, and each paragraph has a main idea that helps to emphasize the content of the science supplement teaching material. Furthermore, in the aspect of suitability with students, they also obtained a score of 100.00% in the very feasible category, showing that the presentation of language in science supplement teaching materials is easy for students to understand with a simple choice of words. Then in the aspect of term consistency, obtaining a score of 100.00% is still categorized as very feasible, showing that the terms presented in the science supplement teaching materials are appropriate and effective in supporting the learning process.

The last aspect, namely, language style also obtained a score of 100.00% of the category is very worthy showing that language style can support a fun and interesting learning atmosphere. Thus, it can be concluded that the language presented in the science supplement teaching materials has been prepared simply following the cognitive development of students and supporting the learning process. This is in line with the opinion Baltu & Irawan, (2025) which states that the use of quality language in a textbook can be an effective communication tool during the teaching and learning process. The results before and after the repair can be seen in table 6.

Table 6. Results of Improvement of Science Supplement Teaching Materials Based on Linguists' Suggestions and Comments

Before Revision	After Revision
	
In the scientific word part of the coconut that is written "*Coconus Nucifera Linn*" needs to be corrected because if the scientific word is	The writing of the scientific word coconut was changed to "*Cocos Nucifera*" so that the writing was correct.

Before Revision	After Revision
wrong, then the meaning of the word is different	
	
The word "Kuburaya" needs to be corrected based on the correct provincial writing error so that the spacing is not correct.	The provincial writing "Kubu Raya" has been changed with spaces.

After the teaching materials of the science supplement are completed, the validity test and revision in accordance with the suggestions and comments from the validator will be tested by the response to 3 teachers of science subjects and to students who have studied the material, its forms, substances and changes as many as 12 students in the small-scale test and 24 students in the large-scale test at SMPN 1 Sungai Kakap. The purpose of this response test is to find out the responses of teachers and students to the teaching materials of the science supplement that are developed in accordance with the aspects to be measured. In the teacher's response test to the science supplement teaching materials, a response questionnaire was given using a google form covering aspects of ease of use, teacher interest, and product benefits. The results of the teacher's response questionnaire can be seen in the following figure 5.

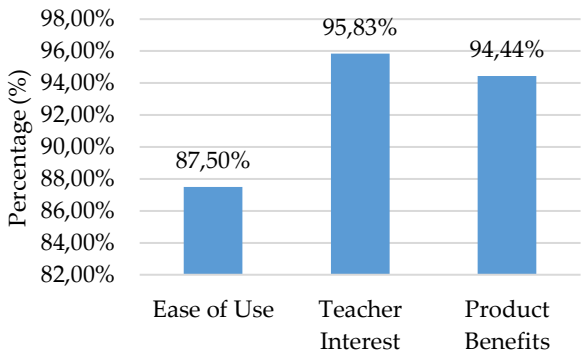


Figure 5. The Average Percentage of Teacher Response Tests

Based on figure 5, the average percentage of the three aspects of the assessment was calculated, and it was found that the score was 92.59% with a very interesting category. Thus, it can be concluded that the science supplement teaching materials developed received a very good response from science teachers. In terms of ease of use, it received a score of 87.50% in the very attractive category. This shows that teachers consider the instructions for using science supplement teaching materials to be very clear and easy to follow. The presentation of the material is very good and easy to understand and relevant, but with refinements such as repaying attention to the material from the examples of local wisdom presented. So that the teaching materials are very practical in their use in learning.

In the aspect of teacher interest, a score of 95.83% indicates that the appearance of the science supplement teaching materials is very interesting, consistent in content and in accordance with the development of students. The display of the elements of local wisdom presented is also very interesting so that the teaching materials of the science supplement can create an active and contextual learning atmosphere in learning. This is in line with research Fitriani & Krisnawati, (2019) stated that the display accompanied by images, colors and text with clear and appropriate font sizes and types, can make the appearance of teaching materials more interesting and make the material presented convey well. In terms of product benefits, it obtained a score of 94.44% which shows that science supplement teaching materials can help students learn by relating concepts in daily life and fostering an attitude of love for local wisdom in their area. This is in line with research *Alfi* et al., (2023) stated that the existence of local wisdom-based materials in the teaching materials that are presented sequentially is adjusted to learning outcomes, systematic, and can make learning more meaningful. Teaching materials that present material with local wisdom are able to shape the character of students through cultural diversity and help preserve the cultural heritage around students (Nurasiah et al., 2022).

The next step is a small-scale response test carried out on 12 grade VII students at SMPN 1 Sungai Kakap who have studied the material's form, substance and changes. The small-scale

response test to science supplement teaching materials included aspects of learning motivation. The average of the assessment items for the aspect of learning motivation was obtained which was 91.25% and was in the very good category so that it can be concluded that the science supplement teaching materials developed are very feasible to be used in the learning process. The score was obtained from the average results of the statement items showing that students assessed that science supplement teaching materials could increase learning enthusiasm to obtain a score of 83.33%, the second statement of students assessed that science supplement teaching materials could make learning more enjoyable obtained a score of 91.67%. This is in line with research Aji & Pujiastuti, (2022) which shows that good learning is learning that provides a variety of activities that trigger student participation so that the learning is fun and can also provide a learning experience. The statement of the three students assessed that the teaching materials for the science supplement could help better understand the material, obtaining a score of 95.83%. This shows that most students can understand science material, so that science is not only theoretical but can also be applied practically in daily life.

The fourth statement of students assessed that science supplement teaching materials can encourage them to be more active in learning to obtain a score of 93.75%. This shows that science supplement teaching materials have received a good response in helping to increase student engagement and participation during the learning process. The last statement of the five students assessed that the teaching materials of the science supplement could make you want to know more about the local wisdom of the Sungai Kakap obtained a score of 91.67%. This shows that the teaching materials of the science supplement are able to arouse students' curiosity about the local wisdom of the Sungai Kakap, thus encouraging them to be more enthusiastic in digging for information and understanding local cultural values. This curiosity helps students to be more motivated in learning the material presented, both independently and in groups.

The next step is a large-scale student response test which is carried out after the small-scale student response test. This response test involved 24 grade VII students at SMPN 1 Sungai Kakap. The average of the assessment of the learning motivation aspect was obtained at 95.21%, there was an increase in the percentage of small-scale response tests and in the very good category so that it can be concluded that the science supplement teaching materials developed are very feasible to be used in the learning process. This score was obtained from the average results of the statement items showing that students assessed that science supplement teaching materials could increase learning enthusiasm to obtain a score of 93.75%. This shows that the content of the teaching materials of the science supplement is very relevant, contextual, and interesting for students so that it is able to arouse their motivation to learn. The statement of the two students assessed that the teaching materials of the science supplement can make learning more enjoyable, obtaining a score of 94.79%. This shows that the presentation of materials, activities, and the integration of local wisdom in teaching materials is able to create a more interesting, interactive, and non-boring learning atmosphere. The statement of the three students assessed that the teaching materials for science supplements can help better understand the material, obtaining a score of 93.75%. This shows that the teaching materials for science supplements are compiled in a systematic, clear, and contextual manner so that it is easier for students to understand the science concepts studied.

The fourth statement of students assessed that the teaching materials of science supplements can encourage them to be more active in learning to obtain a score of 94.79%. This shows that science supplement teaching materials not only function as a learning resource, but are also able to stimulate student involvement, participation, and activeness in the learning process. The last statement of the five students assessed that the teaching materials for science supplements could make you want to know more about the local wisdom of the Sungai Kakap obtained a score of 98.96%. This is in line with research Anom & Aji, (2024) shows that the teaching materials of science supplements based on local wisdom integrate cultural values that are close to the lives of students, so as to be able to encourage their activeness through various activities in the community, such as observing, studying, conducting direct practice, and drawing conclusions. Through this approach, students not only receive information passively, but are actively involved

in building knowledge, developing critical thinking skills, academic abilities, and skills relevant to daily life, so that learning becomes more meaningful and contextual.

CONCLUSION

Based on the results of the research and development, it can be concluded that the science supplement teaching materials based on the local wisdom of the Sungai Kakap Community on the topic of forms of matter, states of matter, and changes in matter were rated as very feasible, with an overall feasibility percentage of 96.49% based on material, graphical, and language aspects. The teaching materials also received positive responses from teachers, with an average percentage of 92.59%. Similarly, students' responses were categorized as very good, with average percentages of 91.25% in the small-scale trial and 95.21% in the large-scale trial. These findings indicate that the developed teaching materials were positively assessed by experts, teachers, and students and have potential to serve as supplementary materials for science learning based on local wisdom. However, this study was limited to expert validation and teacher and student response assessments; therefore, it does not establish the effectiveness of the teaching materials in improving students' learning outcomes or support their generalizability to broader populations. Further studies involving effectiveness testing and broader implementation are needed to examine these aspects.

RECOMMENDATIONS

The suggestion for further research is to conduct a direct implementation trial in the learning process to determine the effectiveness of teaching materials on student learning outcomes. In addition, the development of teaching materials can be expanded to various levels of education by adjusting the characteristics of students, curriculum, and learning needs so that the resulting products are more applicable and relevant to be used more widely.

BIBLIOGRAPHY

Aji, I. A. B., & Pujiastuti, P. (2022). Development of natural science supplement books based on local wisdom in integrative thematic learning in the elementary schools. *Jurnal Prima Edukasia*, *10*(1), 82–95.

Alfi, A., Arifah, A. R., Nur'aini, D. M. R., Suwandi, S., & Suryanto, E. (2023). Pemanfaatan Muatan Kearifan Lokal Dalam Buku Siswa Bahasa Indonesia Kelas VII Kurikulum Merdeka Terbitan Kemendikbud. *Jurnal Pendidikan Bahasa Dan Sastra Indonesia*, *13*, 187–197.

Anjarwati, A., Qomariyah, S. R., Setyagama, A., & Kartika, D. (2025). Integrasi Deep Learning Berbasis Kearifan Lokal Untuk Melatihkan Kemampuan Bernalar Kritis Pelajar Pancasila. *Seminar Nasional Sosial Sains, Pendidikan, Humaniora (SENASSDRA)*, *4*(1), 69–76.

Anom, I., & Aji, B. (2024). Bagaimana Buku Suplemen IPA Berbasis Kearifan Lokal Meningkatkan Kemampuan Berpikir Kritis Siswa Sekolah Dasar ? *Journal of Education Research*, *5*(4), 4400–4409.

Ansori, & Putridiyanti, F. (2022). Merdeka Belajar dalam Pendidikan Indonesia. *J. Manajemen Pend.*, *3*(2), 1–13. https://doi.org/10.23887/jfi.v3i3.24525

Arif, M. H., & Rukmi, A. S. (2020). Pengembangan buku suplemen untuk keterampilan menulis deskripsi siswa kelas IV Sekolah Dasar. *Jpgsd*, *8*(5), 1033–1043. https://ejournal.unesa.ac.id/index.php/jurnal-penelitian-pgsd/article/view/36680

Artadewa, A., Yurisinthae, E., & Suyatno, A. (2020). Finansial Feasibility Analysis of Copra Processing Business at Jeruju Besar Village Sungai Kakap District Kubu Raya Regency. *Jurnal Sains Pertanian Equator*, *9*, 30–41.

Asmawati, P., Suciptaningsih, O. A., & Aynin, M. (2025). Pengembangan Bahan Ajar Ipas Terpadu Berbasis Kearifan Lokal Pada Materi Indonesiaku Kaya Budaya Di SD Negeri 5 Sumber. *Jurnal Pendidikan IPA*, 1–6.

Baidhawi, M., Aswandikari, & Burhanuddin. (2024). Implementasi Kurikulum Merdeka Belajar dalam Pembelajaran Bahasa Arab. *Kalamuna: Jurnal Pendidikan Bahasa Arab Dan Kebahasaaraban*, *23*(2), 307–328. https://doi.org/10.52593/klm.04.2.07

Baltu, S. F., & Irawan, D. (2025). Analisis Kelayakan Bahasa dalam Buku Teks Bahasa Indonesia Kelas III Sekolah Dasar. *Social, Humanities, and Educational Studies*, *8*(3), 597–605.

Dafrita, I. E., Trisianawati, E., Sari, M., Herditiya, Manisa, T., & Nawawi. (2023). Metode Moss Art Bryophyta untuk Pembelajaran Biologi Sekolah Menengah Pertama. *Berdikari Jurnal Inovasi dan Penerapan IPTEKS*, *11*(2), 163–176.

Fahirah, J., Hastuti, I. D., & Anwar, K. (2025). Pengembangan Modul Pembelajaran Problem Based Learning Berbasis Etnomatematika (MAEN BAWE) Untuk Meningkatkan Motivasi Belajar dan Kemampuan Berpikir Kritis Siswa Pada Materi KPK dan FPB di Sekolah Dasar. *Strategy : Jurnal Inovasi Strategi Dan Model Pembelajaran*, *5*(3), 367–378.

Fatimah, A. H., Farida, A., & Suciani, L. (2025). Pengembangan Prototipe Media Bimbingan Karier Berbasis Web StudyPath Untuk Mengembangkan

Self-Efficacy Siswa. *Indo. Jour. of School Counseling: Theory, Application and Development*, *10*(1), 1–12.

Ferdianto, F., & Setiyani. (2018). Pengembangan Bahan Ajar Media Pembelajaran Berbasis Kearifan Lokal. *JNPM (J. Nasional Pend. Matematika)*, *2*(1), 37–47.

Fitriani, L., & Krisnawati, Y. (2019). Pengembangan Media Booklet Berbasis Keanekaragaman Jenis Jamur Makroskopis. *Jurnal Pendidikan Biologi Dan Sains*, *2*, 143–151.

Hartoyo, A., & Hairida, H. (2024). Exploration of Local Wisdom of West Borneo in Chemistry Learning for Cultivating National Character. *Edumaspul: Jurnal Pendidikan*, *8*(1), 512–518. https://doi.org/10.33487/edumaspul.v7i2.6731

Hasanah, I. M., Ramli, M., & Yunita, L. (2022). Pengembangan Buku Pengayaan Kimia Digital Berbasis Kearifan Lokal Kabupaten Indramayu. *Jurnal Inovasi Pendidikan Kimia*, *16*(2), 75–84. https://doi.org/10.15294/jipk.v16i2.32335

Imron, A., & Shobirin, M. (2021). Pengembangan Bahan Ajar Berbasis Kearifan Lokal Bagi Guru MI di Kota Semarang. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, *21*(1), 71–100. https://doi.org/10.21580/dms.2021.211.7342

Jannah, Z. F., Suciati, Fakhrudin, I. A., Silvitas, Prasetyo, O., & Rachman, H. T. (2024). Identification of Scientific Knowledge of The Process Making Palm Sugar as Local Wisdom of Banyumas and Its Potential for Empowering Scientific Thinking Skills. *Jurnal Pendidikan Sains Indonesia*, *12*(4), 935–960.

Kurniawan, A., Yanti, H., & Abdurrahman, A. (2023). Menajemen Kurikulum Merdeka Belajar Dalam Menerapkan Nilai-Nilai Kearifan Lokal Pada Pembelajaran di SD Negeri 16 Meulaboh-Aceh Barat. *Jurnal Ilmiah Profesi Pendidikan*, *8*(4), 1927–1935. https://doi.org/10.29303/jipp.v8i4.1424

Kusrianto, W., Sudatha, I. G. W., Santosa, M. H., & Suartama, I. K. (2025). Local Wisdom-Based Teaching Materials To Support The Independent Curriculum In Science Learning: A Systematic Literature Review (SLR). *SCIENCE : Jurnal Inovasi Pendidikan Matematika Dan IPA*, *5*(2), 771–784.

Larassati, S. A. A., Suciati, Sari, M. W., Silvita, Prasetyo, O., & Rachman, H. T. (2025). Identification of Scientific Knowledge of the Patehan Tradition of Yogyakarta Palace as a Source of Natural Science Learning. *J. Pend. Sains Indonesia*, *13*(1), 213–232.

Mahmud, D. R. (2023). Bahan Ajar Berbasis Kearifan Lokal Nelayan di Nusantara untuk Meningkatkan Minat Belajar Siswa Sekolah Dasar The Teaching Materials Based on Local Wisdom of Fishermen in the Archipelago to Increase the Interest of Elementary School Students in Learning. *Journal of Innovation and Teacher Professionalism, 1*(3), 121–133. https://doi.org/10.17977/um084v1i32023p121-133

Muhammad Furqan, & Ari Sapto. (2023). Pengembangan Suplemen E-Book Tentang Perang Rakyat Bima Terhadap Kolonialisme Untuk Meningkatkan Motivasi Dan Pemahaman Pada Pembelajaran Sejarah Kelas Xi Ips Di Sma 1 Woha Kabupaten Bima. *Jurnal Pendidikan Sejarah Indonesia* , *6*(1), 55–67.

Mustaghfirin, U. A., & Zaman, B. (2025). Tinjauan Pendekatan Pembelajaran Mendalam Kemdikdasmen Perspektif Pendidikan Islam. *Journal of Instructional and Development Researches*, *5*(1), 75–85. https://doi.org/10.53621/jider.v5i1.476

Nurasiah, I., Marini, A., Nafiah, M., & Rachmawati, N. (2022). Nilai Kearifan Lokal: Projek Paradigma Baru Program Sekolah Penggerak untuk Mewujudkan Profil Pelajar Pancasila. *Jurnal Basicedu*, *6*(3), 3639–3648.

Perangin-Angin, H., Suwardy, R., Damanik, Z. P., & Dalimunthe, P. A. (2023). Analisis Kurikulum Berbasis Kearifan Lokal di Sekolah Dasar. *Sindoro : Cendikia Pendidikan*, *2*(4), 10–20. https://doi.org/10.9644/scp.v1i1.332

Purnamasari, N. L. (2019). Metode Addie pada Pengembangan Media Interaktif Adobe Flash pada Mata Pelajaran TIK. *Jurnal Pendidikan Dan Pembelajaran Anak Sekolah Dasar*, *5*(1), 23–30.

Putra, A. A., & Azhar, F. (2024). Menghormati kearifan lokal dengan mengintegrasi hak ulayat masyarakat adat pada strategi pembanunan dan konservasi berkelanjutan. *J. Ilmu Sos. dan Hum.*, *2*(6), 243–253. https://jurnal.kolibi.org/index.php/kultura/article/view/1567

Rayis, P. W. A., Prayogi, S., Herayanti, L., & Kurnia, N. (2024). Integration of Ethnoscience in Science Learning : An Ethnoscience Study on the Palm Sugar Production Process. *Lensa: Jurnal Kependidikan Fisika*, *11*(2), 97–115.

Retnawati, H. (2016). *Analisis Kuantitatif Instrumen Penelitian (Panduan Peneliti, Mahasiswa, dan Psikometrian)*. Parama Publishing.

Rosyidiana, N. R., Normadewi, P. N. L., Pradnyani, A., & Suhardianto, N. (2023). Konsep dan Implementasi Corporate Social Responsibility Berbasis Kearifan Lokal Indonesia : Sebuah Tinjauan Literatur. *Akuntansi : J. Akuntansi Integratif*, *9*(1), 19–36. https://doi.org/10.29080/jai.v9i1.1171

Suyanto. (2025). *Naskah Akademik Pembelajaran Mendalam Menuju Pendidikan Bermutu Untuk Semua*. Kementerian Pendidikan Dasar dan Menengah Republik Indonesia.

Tinja, Y., Towaf, S. M., & Hariyono. (2017). Pengembangan Bahan Ajar Tematik Berbasis Kearifan Lokal Sebagai Upaya Melestarikan Nilai Budaya Pada Siswa Sekolah Dasar. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, *2*(9), 1257–1261.

Waruwu, M. (2024). Metode Penelitian dan Pengembangan (R&D): Konsep, Jenis, Tahapan dan Kelebihan. *J. Ilmiah Profesi Pend.*, *9*(2), 1220–1230. https://doi.org/10.29303/jipp.v9i2.2141