

# Designing Local Wisdom-Oriented IPAS Learning Worksheets to Enhance Learning Relevance in Tanah Bumbu Elementary Schools

**Yudha Adrian, Arina Wulandari, Dodiet Enggar Wibowo, Mutia Ulvah**

Universitas PGRI Kalimantan, Jalan Sultan Adam Banjarmasin, Indonesia

e-mail: yudhaadrian@upk.ac.id, arina\_wulandari86@upk.ac.id, dodiet\_pgsd@upk.ac.id,

mutiaulvah@gmail.com

\* yudhaadrian@upk.ac.id

**Abstract:** Potential-based education and local wisdom are important approaches to improving the quality of contextual and meaningful learning. In the context of IPAS learning in elementary schools, the use of Student Worksheets (LKS) that are relevant to the surrounding environment is still very limited. Many of the LKS used do not showcase local potential, so students are unable to connect the subject matter with their real lives. Therefore, the development of IPAS SWs with a perspective of the potential and local wisdom of Tanah Bumbu Regency is a strategic effort to strengthen students' understanding of concepts, character, and love for their own region by testing the validity and practicality. This type of research is development research using the 4D development model (Define, Design, Develop, Disseminate). The define stage includes analyzing the needs, materials, and characteristics of the students. The design stage involves compiling the initial design of the worksheets based on local potential and wisdom. Validation is carried out by experts in materials, language, media, and practicing teachers, as well as limited trials involving 12 fifth-grade students at SDN Muara Pagatan Ujung. The data obtained were classified into two types: qualitative and quantitative. Qualitative data consisted of criticism and suggestions from experts, while quantitative data were obtained from questionnaires, which were then converted into qualitative form using the Likert and Guttman scales to determine the practicality of the product. The results showed that the IPAS worksheets The results show that the IPAS worksheets, which focus on the potential and local wisdom of Tanah Bumbu Regency, have a validity rate of 81.25% among subject matter experts, 72.91% among language experts, 95.83% among media experts, 97.91% among classroom teachers, and 96% among students. These data indicate that the developed worksheets are suitable for use in IPAS learning because they meet the criteria of validity and practicality for improving students' understanding of environment-based material.

**Key Words:** Put 3-5 your keywords here; keywords separated by semicolon  
worksheet, IPAS, local wisdom

## Introduction

With the changing times, educators are also required to be able to apply learning related to their surroundings to students in the learning process. A teacher must be able to design effective and high-quality learning materials so that the classroom learning process can run smoothly and effectively, and the desired learning objectives can be achieved (Kristin, 2021). One way to improve the quality of these learning materials is by integrating local cultural values into teaching materials. According to Kharismawati (2023), incorporating local wisdom into the basic education curriculum has the potential to be a viable strategy for increasing student engagement in engineering studies. Educators can foster students with noble character, admirable personalities, and broad perspectives, enabling them to forge meaningful relationships with their social environment.

Local wisdom-based education is education that is more grounded in the teaching of cultural values. This education teaches students to remain close to the concrete situations they face every day. Utilizing local wisdom can be done by utilizing students' knowledge and experiences related to local wisdom as considerations in determining methods and selecting learning environments (Faizi et al., 2023). This approach aims to instill students' sense of identity and self-worth, as well as strengthen the relationship between the school, the community, and the surrounding environment. Local wisdom encompasses not only traditions or customs but also how communities solve problems, protect the environment, and build harmonious social relations.

Local potential-based education aims to connect new content with students' existing knowledge of the local environment. Existing knowledge related to local potential will facilitate teachers in connecting new knowledge to be taught to students (Ariyanto et al., 2016) as cited in (Nurjanah et al., 2024). Thus, the learning process becomes more meaningful and relevant to students' daily lives, thus encouraging them to be more active in exploring and developing the potential of their surroundings.

Natural and Social Sciences (IPAS) learning is an integration of science and social studies subjects designed to provide contextual learning experiences for students (Viqri et al., 2024). Through IPAS learning, students are encouraged to develop curiosity about surrounding phenomena and understand the interconnectedness of natural and social aspects in everyday life. This approach aims to equip students with critical, creative, and collaborative thinking skills, as well as increase their awareness of the natural and social environment.

The selection of locally-based teaching materials is highly appropriate for the characteristics of IPAS, particularly those that utilize living things and their environment. Furthermore, teaching materials stimulate students' awareness of various local potentials that can be developed, making them more critical and more easily able to apply what they have learned to their environment (Masihu & Augustyn, 2021). Therefore, the development of teaching materials is crucial, especially those that emphasize the process, so that student learning becomes more meaningful. To select complex teaching materials, a teaching material or worksheet (LKS) can be compiled, combining several books and related worksheets (Martoni, 2023).

Observations and interviews with homeroom teachers revealed that the material and questions in the worksheets often use examples from other regions or are of a general national nature, making it difficult for students to understand the context because they are not relevant to their daily lives. Lack of recognition of local potential: the worksheets do not provide space to introduce local potential such as natural resources, culture, livelihoods, or unique traditions found in the surrounding environment, for example in the Tanah Bumbu area. The lack of character development in patriotism and the absence of local content in the worksheets leads to students lacking a sense of pride and concern for their own region. Learning lacks contextualization and meaning, and teachers feel that students lack enthusiasm and understanding of the material because they do not see the connection between the subject matter and their real lives.

The minimal integration of local potential in learning results in students lacking awareness of the potential and local wisdom around them, especially in Tanah Bumbu Regency, where the students reside. There is a lack of student involvement in understanding their surroundings. This is due to the limited availability of local worksheets (LKS) and their underdevelopment. Limited out-of-class learning activities to explore the surrounding environment. Teaching materials have not been adapted to local characteristics. This situation results in students having difficulty connecting the material to local wisdom.

Learning does not strengthen students' local wisdom identity. There is a lack of student awareness of local potential. The purposes of this research are: describing validity and determine the practicality of the product.

## Method

### Research designs

This research employs a research and development (R&D) method aimed at producing teaching materials. The model used is the 4-D Model (Four D), a framework for developing learning materials introduced by S. Thiagarajan, Dorothy S. Semmel, and Melvyn I. in 1974.



**Figure 1.** Figure stages of Model Four D

This model consists of four main stages: Define, Design, Develop, and Disseminate. The selection of this method and model was based on the desire to develop Student Worksheets (LKS). The resulting LKS product will then undergo feasibility testing in the form of validation and product trials to determine the extent to which the LKS for Science and Natural Sciences (IPAS) on the theme of Tanah Bumbu's Potential and Local Wisdom can improve student motivation and learning outcomes.

### Research Subjects

The subjects in this study were validators: media experts, material experts, and language experts, conducted by three lecturers with expertise in their fields. This was to determine the responses of the media expert lecturers to the feasibility of the LKS for Science and Natural Sciences (IPAS) on Tanah Bumbu's Potential and Local Wisdom. The object of this research is the Tanah Bumbu Local Wisdom and Potential Science Worksheet (LKS IPAS) to increase knowledge about the potential and local wisdom of the region for fifth-grade elementary school students. The instrument used in this research is a questionnaire. The questionnaire used by the researcher

### Instruments

A validation sheet is an important instrument used by experts to evaluate and validate the feasibility of a product developed by researchers. A questionnaire is a sheet addressed to respondents or subjects in a study, including teachers and students.

### Data Analysis

In this development research, a questionnaire was used to analyze the data, while the validity or feasibility of the media was measured based on the assessments of three experts (media, materials, and language) and one user who evaluated the media, materials, and language aspects of the teaching materials. Quantitative data from the validation test used a Likert scale (1, 2, 3, 4) and a Guttman scale for the teacher and student response questionnaires. The results of the trial were grouped into two types of data: quantitative and qualitative. Qualitative data included input and suggestions provided by experts in the fields of media, materials, and language. Meanwhile, the quantitative data obtained from the questionnaire will be converted into qualitative data using Likert and Guttman scales to assess the product's practicality.

## Findings Obtained

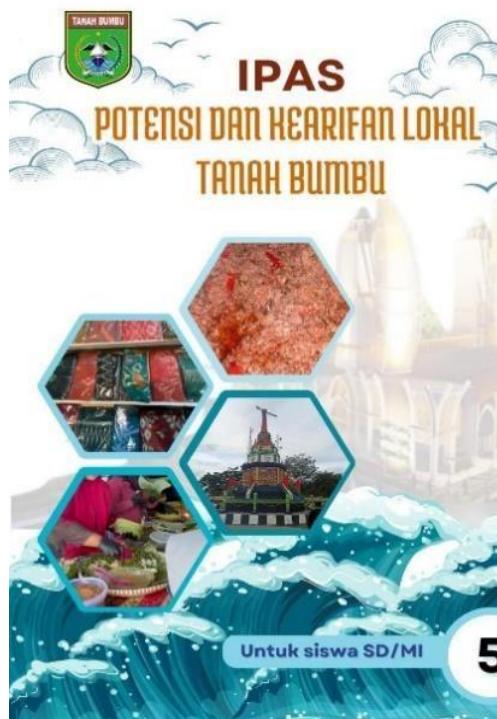
### Product Validation Results (Expert Test)

The expert validation of the teaching material product LKS (Large-Scale Worksheet) on Local Potential and Wisdom was carried out in three stages. These stages refer to the principles of educational product development that emphasize the importance of feasibility testing from various parties. This validation was carried out by material experts, media experts, and language experts from the University of PGRI Kalimantan. This validation aims to assess the suitability of the content to the curriculum, the quality of the media display (design, visuals, and navigation), and the clarity and accuracy of the language used. The validation result from the material experts was 39 out of a maximum total score of 48, which is equivalent to a percentage of 81.25%. Based on the interpretation criteria, this result is in the **valid category**. The validation result from the language experts was 35 out of 48, which when converted into a percentage results in a value of 72.91%. Based on the score interpretation guidelines, this result is categorized as **quite valid**. The validation result from the media experts was 46 out of a maximum score of 48, which is equivalent to a percentage of 95.83%. Based on the assessment criteria, this Student Worksheet (LKS) is included in the **very valid category**.

Validation by fifth-grade teacher users of Muara Pagatan Ujung Elementary School. This validation focuses on the usability aspect of the media in a real learning environment. The third stage is a limited trial involving 12 fifth-grade elementary school students as end users. This trial aims to obtain data on student responses to the teaching materials, especially regarding material understanding, attractiveness, and ease of use. The total score given was 47 out of a maximum score of 48, with a percentage of 97.91%. Based on the assessment interpretation guidelines, this result is included in the **very valid category**. Student user validation of the questionnaire collection results obtained a total score of 116 out of a maximum score of 120 (12 students  $\times$  10 statement items). indicating that the average percentage of student questionnaire responses was 96%, which is included in the **very practical category**.

### Product Revised

This product revision is a crucial step in developing teaching materials because it produces a refined final product. Therefore, the revised teaching materials are deemed suitable and engaging for use in the science and science learning process based on the potential and local wisdom of Tanah Bumbu.



**Figure 2.** Before



**Figure 3.** After

This validity indicates that the material content, media display, and language in the worksheets are in accordance with student needs and the standards for developing teaching materials. The materials raised reflect local contexts such as Pagatan Weaving, typical Ronto culinary delights, and the history of regional struggles, thereby increasing engagement and relevance of learning. In other words, the developed worksheets are suitable for use as local context-based teaching materials in fifth grade elementary school. In addition, Wardhani et al., (2024) stated that integrating local wisdom in learning has been proven effective in increasing students' understanding of local culture and strengthening their character. By raising the themes of Pagatan Weaving, Ronto, and Agrotechnopark, this worksheet is considered capable of representing local cultural values with a strong contextual approach. This is reinforced by Rusfriyanti & Rondli (2023) who stated that learning with interactive multimedia based on local wisdom can improve elementary school students' learning outcomes. The developed worksheets present interactive visual content, local cultural illustrations, and a differentiation approach, which have been proven to attract interest and help students' understanding better. By integrating local content and visual strategies, this LKS is able to create a more contextual, enjoyable, and meaningful learning atmosphere for students.

## Conclusion

The results of this study show two important points: this study produces products. The validation result from the material experts' criteria the valid category. The validation result from the language experts result is categorized as quite valid. The validation result from the media experts' criteria, the very valid category. Validation by fifth-grade teacher users this result the very valid category. Student user validation the very practical category.

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