



DEVELOPMENT OF PHYSICS STUDENT WORKSHEET (LKPD) INTEGRATED WITH ISLAMIC VALUES ON SOUND WAVE MATERIAL

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Abstract

This study aims to develop valid and practical physics student worksheets that integrate Islamic values into sound wave material. The research was conducted at SMAN 2 Prabumulih during the second semester of the 2023/2024 academic year, involving class XI IPA 3 students. We used the Research and Development (R&D) method with the Borg & Gall model. Data collection involved interviews and questionnaires administered to experts in media, material, Islamic values, and linguistics, as well as to respondents, to assess the worksheets' validity and practicality. The results showed that the worksheets were valid, with a validation score of 85.15%. Field trials revealed a student response rate of 93.3%, indicating that the worksheets were very practical. Teachers also rated the worksheets highly, with an average response rate of 94.2%, categorizing them as very practical. These findings suggest that the developed worksheets are both valid and practical for use in physics education.

Keywords: Student Worksheet, Islamic values, Physics, Sound waves, Research and Development

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INTRODUCTION

Education is a conscious and planned effort to create a pleasant learning environment, enabling students to actively develop their potential. The objectives of education encompass the development of spiritual and religious strength, self-control, positive personality formation, intellectual enhancement, instillation of noble character, and the development of skills necessary for individuals and society (Ujud et al., 2023). Education is a long-term investment in human resources that holds strategic value for the continuity of civilization. Therefore, almost all countries consider education to be a crucial and primary aspect of national development (Arifuddin, 2019).

Law Number 20 Year 2003 on the National Education System emphasizes that education must be able to instill faith and closeness to God Almighty. Education that is in accordance with this system must also focus on developing attitudes and behavior, not just academic aspects, in order to create a generation that is integrity-driven and contributes positively to society. Physics education, which is part of the national education system, also plays an important role in developing attitudes and behavior, particularly in students, as some of the material taught in physics learning is related to natural phenomena that are also contained in the Quran. For example, in Surah Al-Hijr verse 22, it is emphasized that the first phase in the formation of rain is wind. Until the early 20th century, the only known relationship between wind and rain was that wind moved clouds. However, modern meteorological discoveries have shown the "marriage" role of wind in the formation of rain (Ashari et al., 2019).

Students in class XI IPA 3 experience difficulties in understanding the concept of sound waves due to the current textbook being too broad and detailed. LKPD (Student Worksheet) can be a solution by presenting material in a simpler and more directed way, accompanied by activities and exercises that enable students to learn

independently and interactively. The existing LKPD is still general and can be improved to support the development of students' attitudes and behavior through more structured material integrated with Islamic values.

METHODS

The type of research conducted is Research and Development (R&D). This type of research aims to examine the effectiveness of the product developed so that it can be beneficial to the general public (Sugiyono, 2014). This research develops a physics LKPD (Student Worksheet) that integrates Islamic values on sound wave material.

Data analysis was performed to assess the feasibility of the entire dataset obtained from the questionnaire, where respondents provided scoring assessments. The assessment percentage was calculated using the formula: Percentage Assessment

$$PA = \frac{x}{\sum xi} \times 100\%$$

Table 1. Criteria for LKPD Validity

Score	Criteria
86%-100%	Highly Valid
71%-85%	Valid
51%-70%	Fairly Valid
0%-50%	Invalid

The practicality of the media is evaluated based on the trial results with teachers and students using the following formula:

$$P = \frac{x}{\sum xi} \times 100\%$$

Table 2. Product Practicality Analysis

Score	Criteria
86%-100%	Highly Practical
71%-85%	Practical
51%-70%	Fairly Practical
0%-50%	Not Practical

RESULTS AND DISCUSSION

This LKPD undergoes four validation processes: media validation, material validation, Islamic value validation, and language validation. The objective of this validation is to assess the feasibility and validity of the product. The validators provide an expert assessment of the product's feasibility, ensuring it meets the required standards.

Table 3. Result of LKPD Validation

No	Validation Aspect	Validation Score	Category
1	Media	90,9%	Highly Valid
2	Material	77,2%	Valid
3	Islamic Values	92,5%	Highly Valid
4	Language	80%	Valid

The product trial phase is a pivotal stage in the learning media development process, where the practicality of the product is evaluated based on scores and assessment criteria. The practicality of the learning media is determined by its application in learning activities and the feedback from teachers and students.

Table 4. Result of LKPD Practicality Testing For Students

No	Trial Type	Practicality Score	Category
1	Small-Scale Trial	89,3%	Highly Practical
2	Field Trial	92,3%	Highly Practical

A practicality test was also administered to educators, involving three physics teachers who assisted the researcher in evaluating the product's practicality. The educators' trial yielded an average score of 94.2%.

Table 5. Result of LKPD Practicality Testing For Educators

No	Educator	Practicality Score	Category
1	Educator 1	92,3%	Highly Practical
2	Educator 2	92,3%	Highly Practical
3	Educator 3	98%	Highly Practical

CONCLUSION

The results of the validity test demonstrate that the LKPD developed achieved a validity percentage of 85.15%, categorizing it as valid. This percentage confirms that the LKPD meets the predetermined validity standards, ensuring the material and activities are relevant and aligned with the learning objectives. The validity assessment encompasses the relevance of the LKPD material to physics concepts on waves and sound, as well as the integration of Islamic values. Furthermore, the practicality test results show that the LKPD scored 89.7% from students and 94.2% from educators, both of which are categorized as very practical. Based on these findings, it can be concluded that the LKPD developed exhibits high quality and is feasible for use as an effective learning medium.

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