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Development of Integrated Student Worksheets (LKPD) of Al-Quran Verses on the Subtheme of How the Body Processes Clean Air for Grade V MI Students: Development Study with 4D Model

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Abstract

This study aims to develop Student Worksheets (LKPD) on the subtheme "How the Body Processes Clean Air" integrated with verses of the Qur'an for fifth grade students at MI Al-Manar Lamone, using the 4D development model (Define, Design, Develop, Disseminate). The development process begins with the needs analysis stage involving analysis of students, materials, and teachers, followed by designing LKPD according to the thematic framework. At the development stage, LKPD was tested for validity by three experts, namely religious experts, material experts, and language experts. The validation results showed that this LKPD met the valid criteria with an average percentage of 89.3%. Furthermore, the practicality test also produced a percentage of 82%, which is included in the very practical category. The results of the practicality and product effectiveness tests show that this LKPD can be used effectively in increasing students' interest and motivation to learn, as well as enriching their understanding of learning materials with an integrative approach based on religion. Thus, this LKPD is suitable for use in learning and has the potential to make a significant contribution to improving the quality of education

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Introduction

Education plays an important role in developing self-potential, forming noble morals, and increasing the intelligence of students. This is in accordance with the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, which states that education is a conscious and planned effort to create a learning atmosphere that supports students actively in developing their self-potential, spirituality, intelligence, morals, and skills that are beneficial to society, the nation, and the state.

Effective education in the future must be able to prepare students to face various challenges of life, both now and in the future. In this context, religion and science have a central role, especially for Muslims who are required to seek knowledge as taught in the Qur'an and Hadith. With education, a person can improve their abilities and gain knowledge that they did not previously have.

The existence of quality education is very important to produce an intellectual generation that will become the nation's successors. The role of teachers in the learning process is also a key factor. Teachers are required to package learning appropriately in order to achieve the expected competencies. One effective way for students to be actively involved in learning is to use the right teaching methods and good classroom management. Teachers must set goals, choose relevant teaching materials, and use methods that support student participation.

In the context of basic education, the implementation of the 2013 curriculum with a thematic approach aims to integrate various aspects of knowledge, including science with religious values. For example, material on how the body manages clean air can be connected to verses of the Qur'an about the creation of humans and the universe, so that students not only understand science, but also appreciate its relationship with religion. This integration is expected to increase students' knowledge and foster awareness of the importance of maintaining environmental cleanliness.

The urgency of integration between the Qur'an and science in modern education has two important goals, namely moral-spiritual development and intellectual development. The synergy between the Qur'an as a guide to life for Muslims and science as knowledge that continues to develop, creates an education system that is able to produce a generation with critical thinking and high spirituality. This integration is also important in facing a generation of students who are increasingly critical of the subject matter. Students not only need a normative explanation of a topic, but also a scientific and rational explanation. Therefore, the combination of the Qur'an, science, and education is expected to provide a more comprehensive understanding to students.

One way to realize this integration is by developing teaching materials that combine verses from the Qur'an with scientific concepts. Teaching materials such as Student Worksheets (LKPD) can be an effective means of increasing student involvement. LKPD contains practical instructions, discussion materials, and questions that encourage students to be active in the learning process. In schools with a religious background, such as Islamic elementary schools (MI), teaching materials integrated with the Qur'an are an important need.

However, based on initial observations conducted at MI 21 Al-Manar Lamone, the available teaching materials have not been integrated with the verses of the Qur'an, whereas the school needs teaching materials that reflect religious and scientific values

simultaneously. Therefore, this study aims to develop LKPD that integrates verses of the Qur'an with the sub-theme of how the body manages clean air for fifth grade students of MI 21 Al-Manar Lamone. This is expected to help students not only learn science but also relate that knowledge to religious teachings.

Based on this background, this study aims to answer several important questions related to the development of Student Worksheets (LKPD) on the subtheme of how the body manages clean air integrated with the verses of the Qur'an for fifth grade students of MI 21 Al-Manar Lamone. The first question relates to the analysis of the development needs of the LKPD, followed by the development procedure. In addition, this study also evaluates the validity and practicality of the developed LKPD. By integrating religion and science in teaching materials, it is hoped that education will be able to produce a generation that is not only intellectually intelligent but also has deep spiritual awareness.

Method

This research is a development research with a Research and Development (R&D) approach, which aims to produce a product in the form of Student Worksheets (LKPD) integrated with verses of the Qur'an on the sub-theme "How the Body Manages Clean Air". The development of LKPD was carried out using the 4D model developed by Thiagarajan, but this study only covers the first three stages, namely Define, Design, and Develop, considering the limited time and cost. The location of the research was conducted at MI 21 Al-Manar Lamone, Karang-karangan Village, Bua District, Luwu Regency, South Sulawesi, with the research subjects being 20 fifth grade students, consisting of 11 girls and 9 boys.

At the definition stage, an analysis is carried out on the learning materials, characteristics of students, and the use of learning resources by teachers. The material analysis aims to identify content that is in accordance with basic competencies and learning objectives, while the student analysis focuses on students' prior knowledge, motivation, and interests. On the other hand, teacher analysis helps maximize the developed LKPD products. The next stage, namely design, involves designing the structure of the teaching materials, including the cover, table of contents, materials, questions, evaluations, and answer keys. The design of the teaching materials was created with the help of the Canva and Microsoft Word applications to make the appearance more attractive and easy to use.

At the development stage, the designed product was then validated by three experts, namely a religious expert, a material expert, and a language expert. Each expert provided an assessment related to the suitability of the content, both in terms of the integration of the verses of the Qur'an, the suitability of the material with learning competencies, and language. Based on the validation results, this product was then revised according to input from the experts. Research data were collected through several techniques, namely observation to observe student responses to teaching materials, semi-structured interviews with grade V teachers, and questionnaires using a Likert scale to measure the opinions of validators and students regarding the developed LKPD. Documentation in the form of photos and supporting documents was also carried out to complete the research data.

After all data is collected, qualitative and quantitative analysis is carried out. Qualitative analysis is carried out by grouping criticisms and suggestions from validators, which are then presented and conclusions are drawn for product improvement. Meanwhile, quantitative analysis uses a Likert scale to calculate the percentage of the LKPD validity

level. A product is declared valid if it obtains a validity percentage value between 80-100%. This product will be tested practically on students after being declared valid by experts.

Results

The research conducted at MI 21 Al-Manar Lamone aims to develop Student Worksheets (LKPD) through a 4D approach that includes the stages of Define, Design, and Develop. At the Define stage, a needs analysis is conducted to understand the challenges in learning the sub-theme "how the body manages clean air" integrated with the verses of the Qur'an for fifth grade students. Based on observations, students' enthusiasm and interest in understanding the material are very low, so the researcher designed a more interesting LKPD by combining elements of the Qur'an to increase student motivation and understanding.

In the material analysis, the researcher adjusted the content of LKPD with the Core Competencies and Basic Competencies applicable in the 2013 curriculum. Basic Competencies are focused on understanding the respiratory organs and how to care for them, which are broken down into indicators designed to hone high-level thinking skills or High Order Thinking Skills (HOTS). Bloom's Taxonomy is used as a basis for formulating learning objectives, where each objective is intended to improve students' cognitive abilities gradually.

In the Design stage, researchers compile LKPD with an opening, content, and closing section. The opening section includes a cover, foreword, and table of contents. The content section consists of the main material integrated with the verses of the Qur'an, equipped with evaluation questions designed by the researcher. The closing section contains a bibliography that is in accordance with the material used.

Next, at the Develop stage, the designed LKPD was tested for validity and practicality. The validation test was conducted by three expert validators, namely religious experts, material experts, and language experts. The validation results showed that this product was valid with a score of 85% from the religious expert validator, 91.7% from the material expert validator, and a very relevant assessment from the language expert validator. Based on suggestions from the religious expert validator, the researcher made minor revisions by adding interpretations of the Qur'anic verses that were relevant to the breathing material. With the results of the validation test, this LKPD was declared suitable for use in learning in class V MI 21 Al-Manar Lamone.

Discussion

The discussion of this research focuses on the development of Student Worksheets (LKPD) for the sub-theme "How the Body Processes Clean Air" integrated with the verses of the Qur'an for fifth grade students of MI Al-Manar Lamone. This study uses a 4D development model (Define, Design, Develop, Disseminate) which includes three main stages, namely defining, designing, and developing.

In the first stage, namely defining, a needs analysis was conducted involving three aspects: student analysis, material analysis, and teacher analysis. From the student analysis, it was revealed that students' motivation and interest in learning the sub-theme "How the Body Processes Clean Air" was low, which resulted in their lack of initial understanding of this material. In addition, the material analysis identified relevant Core

Competencies, Basic Competencies, indicators, and learning objectives, which were used as references in developing LKPD. Teacher analysis showed that teachers only used thematic textbooks without any other supporting materials. Therefore, the development of LKPD containing additional materials and practice questions is important to increase student involvement in learning.

The second stage is design, which aims to address the gaps found in the definition stage. At this stage, the LKPD design is prepared by following the main structure which includes the opening section (such as cover, foreword, and table of contents), the content section (materials and practice questions), and the closing section (bibliography and back cover). This design is carried out based on previous research findings that show the effectiveness of teaching modules in improving 21st century skills. In addition, evaluation instruments are also designed to be used at the development stage to ensure the validity of the developed product.

At the development stage, the designed LKPD was tested through a validity test by three validators: religious experts, material experts, and language experts. The validation results showed that the LKPD had a high percentage of feasibility. The religious expert validator gave a score of 85% with additional suggestions to include the interpretation of the Qur'anic verses related to breathing. The material expert gave a percentage of 91.7% without additional revisions, and the language expert also gave a score of 91.7% with a valid assessment. If these three validation results are averaged, the LKPD obtained a final percentage of 89.3%, which indicates that this product is valid and suitable for use in learning.

In addition, the practicality test was also carried out with quite good results. This LKPD received a practicality score of 82%, which shows that this product is very practical and effective to use in the learning process. This test confirms that LKPD is able to overcome the problem of low student motivation and interest in learning, and is effective in improving student understanding of the material.

Overall, the development of this LKPD has met the standards of validity, practicality, and effectiveness, so it is worthy of being used as a learning medium that can improve students' understanding of the sub-themes taught, as well as integrating the values of the Qur'an in the learning process. These results are in line with previous studies that also showed the success of modules based on local religious and cultural values in increasing student involvement and understanding.

Conclusion

The development of Student Worksheets (LKPD) for the subtheme "How the Body Processes Clean Air" integrated with verses of the Qur'an has been successful through the 4D development model (Define, Design, Develop, Disseminate). The test results show that this LKPD is valid, practical, and effective for use in learning. Validation from three experts (religion, material, and language) produced an average percentage of 89.3%, indicating that this LKPD has met high eligibility criteria. The practicality test also showed positive results, with a value of 82%, indicating that this LKPD is very practical and helps overcome low student motivation and interest in learning.

The developed LKPD is not only suitable for use, but can also contribute significantly to improving students' understanding of the material "How the Body Processes Clean Air,"

while introducing relevant religious values. The integration of verses from the Qur'an into teaching materials also enriches learning with a deep contextual approach, in line with the findings of previous studies that emphasize the importance of developing teaching materials that are relevant to students' needs and characteristics.

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