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Practicality by Teachers on LKPD Teaching Materials Based on Guided Inquiry Assisted by Wordpress Integrated Islamic Values on Blood Circulation Materials

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ABSTRAK

Penelitian ini bertujuan untuk mengembangkan Lembar Kerja Peserta Didik (LKPD) berbasis Guided Inquiry berbantuan Wordpress yang terintegrasi dengan nilai keislaman pada materi sistem peredaran darah untuk siswa sekolah dasar. Metode penelitian yang digunakan adalah Research and Development (R&D) dengan model pengembangan Plomp, yang meliputi tahap penelitian awal, pengembangan prototipe, dan penilaian. Data penelitian berupa kualitatif dan kuantitatif diperoleh melalui angket praktikalitas yang diisi oleh guru dan praktisi, serta observasi penggunaan LKPD di kelas. Hasil penelitian menunjukkan bahwa LKPD yang dikembangkan sangat praktis digunakan, dengan rata-rata skor praktikalitas 97,5% pada aspek kemudahan penggunaan, kemenarikan sajian, manfaat, integrasi nilai Islam, penerapan Guided Inquiry, dan penggunaan teknologi. LKPD ini mampu meningkatkan kemandirian belajar siswa, keterlibatan aktif, serta pemahaman konsep sistem peredaran darah, sekaligus menanamkan nilai-nilai keislaman. Penelitian ini menegaskan bahwa penerapan LKPD berbasis Guided Inquiry dan platform digital dapat mendukung pembelajaran student-centered yang efektif, efisien, dan menyenangkan di sekolah dasar, serta menjadi dasar bagi pengembangan media pembelajaran lainnya yang terintegrasi dengan nilai agama dan karakter siswa..

ABSTRACT

This study aims to develop student worksheets (LKPD) based on Guided Inquiry, assisted by Wordpress, and integrated with Islamic values for teaching the human circulatory system to elementary school students. The research used a Research and Development (R&D) approach with the Plomp development model, consisting of preliminary research, prototyping, and assessment phases. Data were collected qualitatively and quantitatively through teacher and practitioner practicality questionnaires and classroom observations. The results showed that the developed LKPD is highly practical to use, with an overall practicality score of 97.5% across aspects of ease of use, attractiveness, usefulness, Islamic value integration, Guided Inquiry implementation, and technology utilization. The LKPD effectively enhances students' independent learning, active engagement, and understanding of circulatory system concepts while fostering Islamic values. This study highlights that applying Guided Inquiry-based LKPD using digital platforms supports effective, student-centered learning in elementary schools. The findings provide a foundation for developing other instructional media that combine digital learning tools with religious values and character education, offering an engaging and meaningful learning experience for young learners.

INTRODUCTION

Education helps develop high-quality human resources that are able to adapt to technological advances and times. This understanding is in line with the statement that one of the most important aspects in a country's national development is Education (Siti Nur Rahma & Hikmasanti Agustin, 2021). The world of education has the ability to build quality and competent human resources (Spector & Ma, 2019) (Chen et al., 2018). However, each

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student's ability to understand the lesson varies during the learning process (Álvarez-Huerta et al., 2022). This is because each student has a different way of receiving information during the learning process. Education in Indonesia must be able to prepare students with 21st century skills. Facing the 21st century, science and technology is part of education that can produce competent and capable individuals (Manassero-Mas et al., 2022) (Silalahi, 2017). Learning is the interaction between teachers and students about learning resources in a learning environment, and the success or failure of learning is determined by the learning process carried out (Fazira & Jayanti, 2023). Therefore, the Indonesian government must change its education system to adapt it to technological advances and the times.

The profile of Pancasila students is marked by Indonesian students who have faith, piety, and noble character (Sopwan et al., 2022). Students who have an understanding of religious teachings and beliefs are able to apply this understanding in their daily lives. Integrating Islamic values with science can be interpreted as a process of integrating and adapting elements of religion and scientific knowledge, thus producing harmony between two different aspects. According to Firjan Hi et al (2019), in learning science, students not only gain an understanding of scientific concepts but also understand that the structure of the universe is closely related to the will of Allah SWT. Thus, faith in God is increasing and Islamic attitudes are growing in students. Therefore, by using science learning tools that incorporate Islamic principles, the desired character of students will be achieved (Amir et al., 2019). Natural science (IPA) is a science that originally came from the English word "science", the word science itself comes from the Latin word "scientia" which means knowledge. According to Diniya (2019), the science learning process includes encouraging students to conduct experiments, asking questions about natural phenomena, recording and presenting research data in tables and graphs, and summarizing and reporting findings orally and in writing to answer these questions. In addition, students must understand scientific concepts and principles and their relationships and apply them in problem solving.

Many types of learning resources are used in the learning process in the current era of science and technology to improve the quality and productivity of education (Hidayah et al., 2023). By using learning resources, the education process can be carried out effectively and knowledge and information can be obtained easily (Wulandari et al., 2023). One of the most widely used learning resources in teaching and learning activities is books. Books are aimed at students and contain knowledge about specific subjects. In the learning process, teachers still use textbooks as teaching materials, so students are less interested in learning (Hersandi et al., 2017). However, because books tend to contain too many pictures and excessive

content, students may lack interest in learning. Abstract material such as the circulatory system is rarely done in science learning practicums. This material is considered difficult to understand directly, so a tool is needed that can help the learning process (Ramlawati et al., 2022). Therefore, teaching materials are needed that can make it easier for students to follow the teaching and learning process (Ramlawati et al., 2022).

Based on these problems, the solution proposed by the researcher is to develop teaching materials designed using the WordPress application, which is then enriched with the integration of Islamic values. The teaching materials that are designed must have a unique shape, content and presentation so that they attract students' interest in learning. Wordpress is a platform used by many people as a source of teaching materials. By using Wordpress, students can easily access assignments and learning materials (Hidayat, 2021). The benefits of learning science with Wordpress-based teaching materials include making learning more enjoyable and making it easier for students to analyze the materials available on the platform (Iswari et al., 2021). One of the teaching materials used is the Student Worksheet (LKPD). One way students can learn independently in the learning process is by using the Student Worksheet (LKPD). The function of LKPD is not only as a learning guide but also to increase student involvement in student-centered learning activities (Suryanata & Manuaba, 2022). The weakness of the LKPD used in the learning process is still not appropriate, it only contains an overview, multiple-choice questions, few cases or examples, and LKPD is used as homework (PR) material (Wulandari et al., 2023). So that the LKPD used is monotonous and reduces student involvement in the learning process.

Research on the importance of using Student Worksheets (LKPD) for students has been conducted in several schools (Yeh et al., 2019). Student worksheets (LKPD) are tools that support and facilitate the teaching and learning process, it allows effective interaction between students and educators in enhancing learning activities (Dwiyanti & Rosana, 2020) (Takase & Yoshida, 2021). During learning, sensory activities are very important and influential in the learning process. According to Alsadon (2022), 10% of students learn from what they read, 20% from what they hear, 30% from what they see, 50% from what they see and hear, 70% from what they say, and 90% from what they do and say (Alsadoon et al., 2022) (Haataja et al., 2022). The development of LKPD as a teaching material needs to be supported by a learning model that can encourage active student involvement, one of which is through the application of the Guided Inquiry learning model. The advantage of the Guided Inquiry learning model is that it gives learners the opportunity to solve problems that arise in the teaching and learning process by using their cognitive abilities. The Guided Inquiry learning

model can also increase students' motivation and passion for learning (Nurak et al., 2022). So that teachers can change learning that was initially teacher oriented to student oriented.

LKPD based on Guided Inquiry is a teaching material designed for students to learn independently in the form of worksheets that guide student activities to optimize students' abilities in identifying and conducting critical investigations systematically. Thus, students can develop knowledge, attitudes, and thinking skills in accordance with the criteria that have been set (Nurul et al., 2022). From the description of the problem above, the researcher is interested in conducting research and development with the title "Practicality by teachers to LKPD teaching materials based on Guided Inquiry Assisted by Wordpress Integrated Islamic Values on Circulatory System Materials". This research aims to develop a Guided Inquiry-Based Student Worksheet (LKPD) Assisted by WordPress Integrated Islamic Values on Circulatory System Materials that are practically used by elementary school students.

RESEARCH METHOD

This research is a research and development (R&D). Research and Development is a research method used to investigate, design, manufacture, and test the effectiveness of products that have been produced (Sugiyono, 2021). The development model used in this study is in the Plomp model, which was proposed by Plomp in 2013. According to Plomp, in development research, there needs to be a systematic research design. He states, "We characterized educational design in short as a method within which one is working in systematic way toward the solving of 'make' problem". In other words, he briefly describes educational design as a method in which one works systematically to solve a problem that has been created (Plomp, 2013). In general, the Plomp model is described as follows:

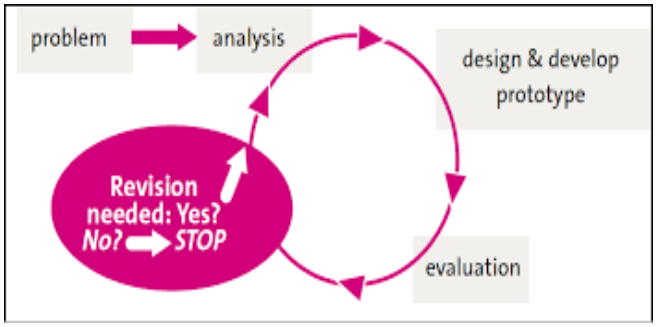


Figure 1. Plomp Model Development Research Design (Source : Plomp & Nieveen, 2010)

Based on the iteration of the Plomp development cycle, there are three development phases, namely the preliminary research stage, the development stage or the prototyping phase and the assessment phase. The development model used in this study is the Plomp

development model. The general procedure for plomp development can be seen in table 1 below..

Table 1. Development stage of the Plomp model

Stages	Criteria	Activity Description
Preliminary Research	More emphasis on validation, not much for consistency and practicality	Determine the basic problems required in the development of the LKPD. Activities at this stage include the collection of rational information about the urgency of the development
Prototyping Phase)	Focus on: consistency (construct validation) and product practicality	It consists of several cycles, formative design and evaluation until finally the final device that can be used in the field is obtained. Development of prototypes to be piloted and revised based on formative evaluation
Assesment Phase	Product efficiency/practicality	Assess whether the product is practical to use

(Source : Alfitriati & Ramadhani, 2022)

This research was conducted at SD IT Al-Fityah Pekanbaru for 8 months starting from September to May of the 2023-2024 school year. The research subjects involved in this study include validators of Islamic value integration aspects, validators of teaching material aspects, validators of learning material aspects, practicality by teachers and student responses. The data used in the practicality analysis was obtained from the practicality questionnaire by educators. The data analysis technique used in this study was carried out by calculating the percentage of practicality value. Practicality scoring by practitioners uses a likert scale of 1-4 for assessment points. The results of practical observations are then converted into statements to determine the feasibility of the product as can be seen in table 2

Table 2. Criteria for Practicality Test Results

No	Percentage (%)	Assessment criteria
1.	0% - 25%	Impractical
2.	26% - 50%	Quite Practical
3.	51% - 75%	Practical
4.	76% - 100%	Very Practical

(Source : Riduwan, 2020)

RESULT AND DISCUSSION

Result

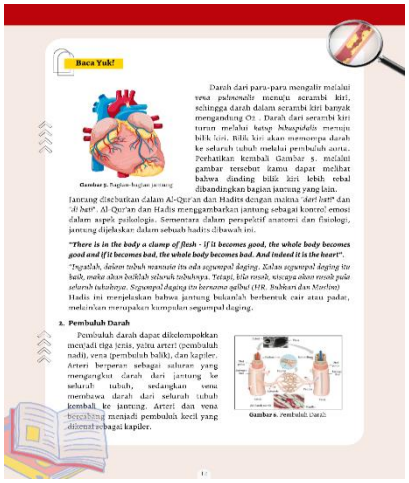
The research was carried out using a Research and Development (R&D) approach using products developed in the form of LKPD in science subjects in elementary school. The purpose of this study is to produce LKPD teaching materials based on Guided Inquiry assisted by Wordpress integrated Islamic values on practical circulatory system materials. In addition, the purpose of using this LKPD is to make it easier for educators to present assignments, change learning conditions from teacher-centered to student-centered, and make it easier for students to understand the content of the material presented.

The practicality of LKPD based on Guided Inquiry assisted by Wordpress integrated Islamic values aims to see the practicality of the use of LKPD by educators in the learning process. At the practicality test stage, educators are required to understand the LKPD and fill out the practicality questionnaire. The data obtained from the questionnaire will be analyzed quantitatively and qualitatively. The determination of the practicality of the LKPD is based on the assessment of questionnaires filled out by practitioners including aspects of ease of use, attractiveness of the presentation, aspects of benefits, integration aspects, aspects of Guided Inquiry, and aspects of technology use.

The practitioner who was determined to conduct a practicality test in this study was Triwiyanti, S.Si, a science teacher at the school. Practitioners examine the developed product and provide comments and suggestions that will be used to make initial revisions to the product. Based on the results of practicality by practitioners, comments were obtained, namely the integration of Qur'anic verses and Hadith in learning needs to be conveyed its application in the field and its relationship with the material presented.

Table 3. Advice and Improvement by practitioners

Practicality by Practitioners	
Suggestions	**Revision**
The integration of Qur'an verses and Hadith in learning needs to be conveyed in the field and its relationship with the material presented.	Fixed and added



(Source: Researcher Document)

The following is the data on the results of the assessment at the small group evaluation stage by practitioners.

Table 4. Practical Test Results Data (Small Group Evaluation)

No	Assessment aspects	Member Ratings	Assessment Criteria
1.	Ease of Use	93,7%	Very Practical
2.	The Attractiveness of the Dish	95,8%	Very Practical
3.	Benefits	93,7%	Very Practical
4.	Integrations	87,5%	Very Practical
5.	Guided Inquiry	96,4%	Very Practical
6.	Use of Technology	91,6%	Very Practical

The results of the practicality analysis at the small group evaluation stage can be seen in the diagram Figure 2 below.

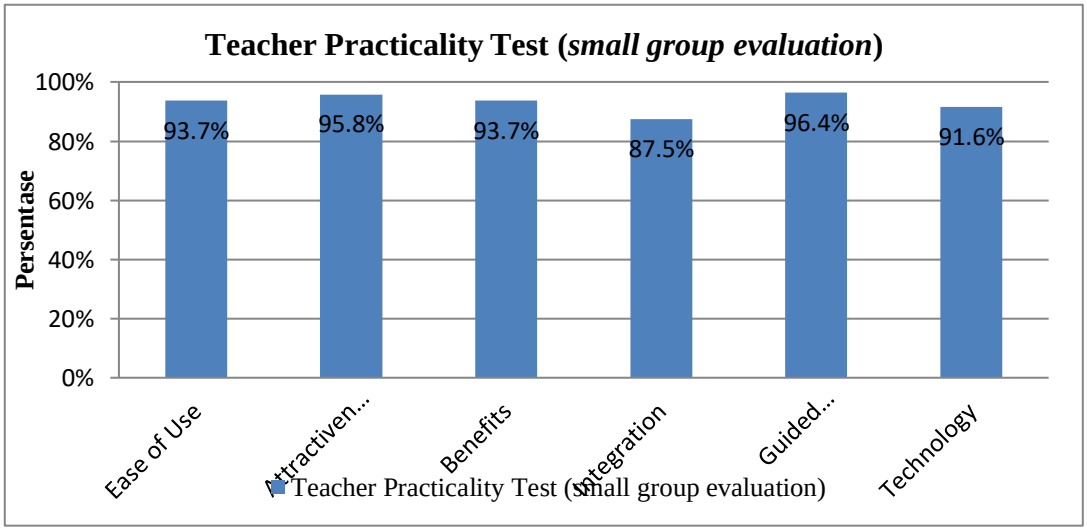


Figure 2. Results of the Teacher Practicality Test (small group evaluation)

The results of the practicality test obtained in the practicality analysis by science teachers were 93.7% in the aspect of ease of use, 95.8% in the aspect of attractiveness of the presentation, 93.7% in the aspect of benefit, 87.5% in the aspect of integration, 96.4% in the aspect of Guided Inquiry, and 91.6% in the aspect of using technology. The overall average value of teacher practicality is 90%, which means that LKPD based on Guided Inquiry assisted by Wordpress is integrated Islamic values in circulatory system materials including the "Very Practical" criterion.

Prototype III was revised based on the results of the small group evaluation so that it produced prototype IV, namely a Guided Inquiry-based student worksheet assisted by Wordpress integrated Islamic values on circulatory system materials that are practical for small group classes and continued at the assessment stage.

At the assessment stage, practitioners re-examine the revised product and fill out a questionnaire for the practicality test of the developed product. The following is the data from the assessment of the practicality questionnaire by practitioners.

Table 5. Data on the Results of Practicality Tests by Practitioners

No	Assessment aspects	Member Ratings	Assessment Criteria
1.	Ease of Use	100%	Very Practical
2.	The Attractiveness of the Dish	100%	Very Practical
3.	Benefits	93,7%	Very Practical
4.	Integrations	95,8%	Very Practical
5.	Guided Inquiry	100%	Very Practical
6.	Use of Technology	100%	Very Practical

The results of the practicality analysis at the assessment stage can be seen in the diagram Figure 3 below.

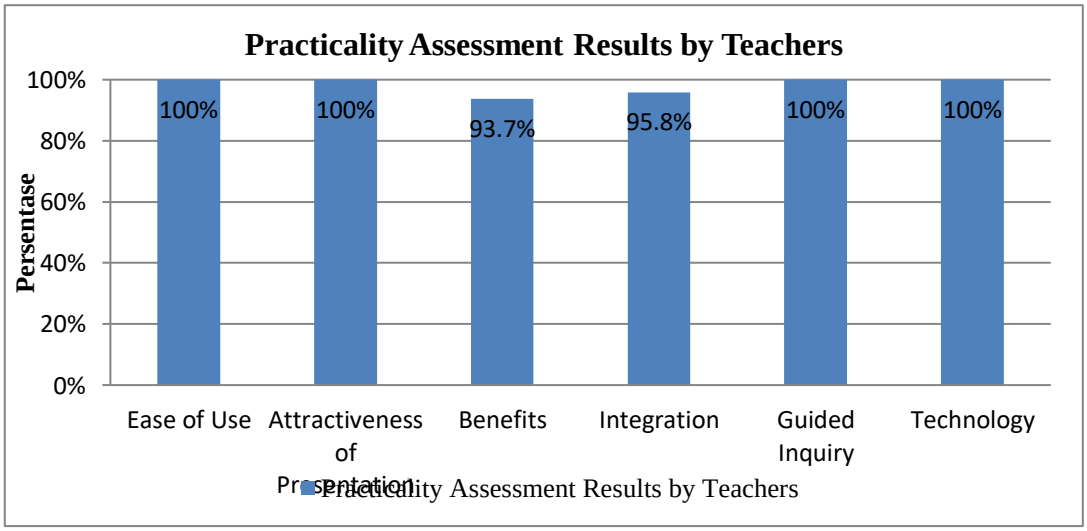


Figure 3. Results of Practicality Assessment by Teachers

Based on the results of the assessment analysis by science teachers, a score of 100% was obtained in the aspect of ease of use, 100% in the aspect of attractiveness of the presentation, 93.7% in the aspect of benefits, 95.8% in the aspect of integration, 100% in the aspect of Guided Inquiry, and 100% in the aspect of technology use. The overall average value of teacher practicality is 97.5%, if converted based on quantitative data guidelines to qualitative data, then the LKPD product based on Guided Inquiry assisted by WordPress is integrated with Islamic values in circulatory system materials including the “Very Practical” criteria.

Discussion

The results of the study showed that LKPD based on Guided Inquiry assisted by Wordpress integrated Islamic values was very practical for teachers to use, with an average practicality score of 97.5%. This practicality is seen in all aspects, including ease of use, attractiveness of the dish, benefits, integration of Islamic values, the application of Guided Inquiry, and the use of technology. These findings are in line with previous research that emphasizes the importance of using interactive learning media to improve student engagement and science learning effectiveness (Nurul et al., 2022; Ramlawati et al., 2022).

From the aspect of ease of use, LKPD makes it easier for teachers to present materials, save time, and encourage student independence in learning. This is supported by international

studies that show that the use of guided inquiry-based digital media increases students' learning autonomy and critical thinking skills (Chen et al., 2018; Alsadoon et al., 2022). Furthermore, the attractive design of the LKPD and the appropriate color combination increase students' interest in learning, as revealed by research on the readability of effective teaching materials (BSNP, 2013; Ayutiani et al., 2022).

The benefit aspect of LKPD can be seen in increasing student learning activities and understanding of science concepts, especially circulatory system materials. This is in line with the findings of research by Dwiyanti & Rosana (2020) who stated that project-based LKPD and guided inquiry can increase science literacy and active involvement of students in elementary schools. International research by Haataja et al. (2022) also shows that experiment-based learning and inquiry can improve students' learning outcomes and metacognitive skills, which supports the practicality of LKPD in real-life classroom contexts.

The integration of Islamic values into LKPD has been proven to increase students' spiritual awareness and build character according to the profile of Pancasila students. This is consistent with the findings of Firjan Hi et al. (2019) who show that the integration of religious values in science learning helps students understand scientific concepts while increasing faith and noble morals. Similar studies internationally emphasize the importance of integrating moral values in science learning to build students' affective competencies (Spector & Ma, 2019; Manassero-Mas et al., 2022).

The Guided Inquiry aspect of LKPD shows that students can find concepts independently with the guidance of teachers, supporting student-centered learning. These results are in line with the research of Nurak et al. (2022), which confirms that the Guided Inquiry method is effective in improving students' analytical and cognitive thinking skills. International studies also support this, for example Fazira & Jayanti (2023) which shows an improvement in students' understanding of concepts and critical thinking skills through the application of guided inquiry in the context of the environment and science.

The use of technology, especially Wordpress, provides flexibility of access and ease of management of learning materials, which is in accordance with the principles of modern blended learning. These findings are consistent with studies by Hidayat (2021) and Iswari et al. (2021) which affirm the effectiveness of digital platforms in supporting student-centered learning-based learning and increasing student learning motivation. International research also shows that the use of LMS or digital platforms in science learning increases engagement and achievement of learning outcomes (Chen et al., 2018; Alsadoon et al., 2022).

CONCLUSION

Based on the development research conducted, LKPD based on Guided Inquiry with the support of Wordpress integrated with Islamic values on circulatory system material has proven to be very practical for teachers in the learning process. The results of the practicality test showed an overall average value of 97.5%, so this product can be categorized as "Very Practical". This LKPD makes it easier for teachers to present materials, increase student involvement, encourage student-centered learning, and integrate Islamic values in the teaching and learning process.

However, this study has several limitations, including the research sample that only comes from one elementary school, the focus of the material is limited to the circulatory system, and the relatively short duration of LKPD implementation. This limitation indicates the need for further research with a wider sample, involving various schools, and expanding the scope of science material so that the results are more generalized. Theoretically, the findings of this study support the development of Guided Inquiry-based learning theory and student-centered learning, while emphasizing the importance of integrating Islamic values in science learning to shape students' character and affective competence. These findings provide a basis for teachers and researchers in designing effective and meaningful LKPD or digital learning media. For further research, it is recommended to explore the use of LKPD based on Guided Inquiry integrated religious values in various science materials, test its effectiveness in different classes and levels, and combine long-term evaluations to see the impact on academic achievement, critical thinking skills, and student character. This approach is expected to produce a more comprehensive, adaptive, and relevant learning model to the needs of students in the digital era.

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