

Development study usage evaluation LKPD based inquiry learning

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ARTICLE INFO

Article History

Received:
15 December 2022;
Revised:
13 January 2023;
Accepted:
17 April 2023;
Available online:
30 June 2023.

Keywords

Evaluation; Use of
LKPD; Students;
Development studies;
Practicality

ABSTRACT

Student worksheets (LKPD) are teaching material sheets that contain tasks that are arranged mathematically according to the level of knowledge and age of students in easy-to-understand language, so that they can study independently with a little help and guidance from the teacher. With the many uses of these teaching materials, this study aims to evaluate the use of student worksheets among students as a means of education and promotion. The research method used in this research is development research using the 4D model but only limited to the response test or evaluation of the use of LKPD. The research was conducted by involving 35 students from various study programs. The data collection tool used is an online questionnaire consisting of 5 constructs with 27 questions related to evaluating the use of LKPD. The collected data were then analyzed using SPSS version 23.00 for windows. The results showed that the students' evaluation of the use of LKPD in the five constructs had an average of 3.98 in the good category. Recommendations for further research are that it is necessary to conduct an initial study first to test the effectiveness of using inquiry learning based worksheets.



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How to cite:

Berlian, M., Vebrianto, R., Romadan, M.A., & Radeswandri, R. (2023). Development study usage evaluation LKPD based inquiry learning. *Jurnal Inovasi Teknologi Pendidikan*, 10(2), 140-148. <https://doi.org/10.21831/jitp.v10i2.55739>

INTRODUCTION

Education is a continuous and sustainable quality production process that aims to create a future human figure rooted in the nation's cultural values and Pancasila (Sujana, 2019). Indonesia has entered the revolutionary era 4.0. In the era of the industrial revolution 4.0, there are fewer and fewer activities physically bound to geographic locations (Sumartono & Huda, 2020). The link between the world of education and the industrial revolution 4.0. The world of education certainly follows the rapid development of technology, and the use of technology, information and communication is becoming an increasingly complex tool to accelerate learning (Putriani & Hudaidah, 2021). In order to achieve competence in the field of Education, various facilities and infrastructure are prepared (Sholihah & Kartika, 2018). One of the skills that a teacher must have in carrying out learning for students is developing teaching materials (Zaputra et al., 2021).

The training process cannot be separated from the learning process. According to Masykuri, in the learning process, teachers provide information to students to solve life's problems (Masykur

et al., 2017). Learning is the interaction between teachers and students in giving or receiving and applying information, through which students receive information (Dedi et al., 2022). Media is a way to transform or deliver messages (Naz & Akbar, 2008). Education in Indonesia must be able to prepare students with 21st century skills (Manassero-Mas et al., 2022). Because of that, educators have a critical responsibility to prepare education for children in the learning process (Mapeala & Siew, 2017). The use of learning media is an important component in the learning process at school (Muteheli, 2017; Pernanda et al., 2018). Cognitive theory of multimedia learning emphasizes the integration of learning media in the teaching and learning process to increase school effectiveness (Ngussa & Chiza, 2017). One of the interesting learning media for students is LKPD. Basically increasing student involvement in the teaching and learning process requires an appropriate and appropriate learning model (Yunita et al., 2019; Masykur et al., 2017). Learning model strategies that are appropriate and appropriate to be used as a reference in the learning process, one of which is the problem-based learning model (Ulandari et al., 2020).

Learning materials material or topics arranged systematically used by teachers and students in learning (Magdalena et al., 2020). LKPD is learning material that can be studied independently with a little help and guidance from the teacher (Puspitasari, 2019). LKPD is a learning tool in written or printed form that is arranged systematically, to test yourself through practice questions presented in the LKPD (Haristah et al., 2019). Teachers should develop learning materials in such a way that students have positive learning outcomes in accordance with the existing curriculum, learning needs and developments in information technology (Mardia & Sundara, 2020). One of the aims and objectives of forming LKPD is to provide educational materials that meet curriculum requirements and pay attention to the needs of students, namely.

Teaching materials that are in accordance with the characteristics of teaching materials and student characteristics. The form of learning is learning materials that are arranged in a systematic and interesting manner, containing materials, methods and demonstration activities that can be used independently to achieve the expected skills (Puspita, 2019). LKPD has certain characteristics, for example in the form of the smallest and most complete learning unit, contains a number of systematically planned learning activities, contains clearly and precisely formulated learning objectives, allows independent learning (Khoirudin, 2019).

One of the ways to overcome the problem of scientific learning is the need to create new breakthroughs and renew the trend of teacher-centered learning as student-centered learning, which is supported by LKPD using appropriate approaches or methods. There are many methods or approaches that can be used in science learning (Widiastuti, 2021). One of the breakthroughs in question is this research by creating teaching materials in the form of Student Worksheets (LKPD) based on Inquiry Learning with a scientific approach. The developed LKPD can be in the form of a guide for developing aspects of critical thinking and scientific attitudes.

This paper contributes to easier for teachers to convey learning material because it already covers all aspects needed in learning so that it can be applied to hone students' abilities. In addition, it can also be a guide for teachers in developing creative and innovative Inquiry Learning-based worksheets.

METHOD

Respondents

Respondents are people who are asked to respond to questions or statements that have been structured or semi-structured to become sources of data in a study. The results of the answers from these respondents will become data to support the research results later. This means that respondents are a source of information to support research. Respondents in this study consisted of 35 students from various study programs at Sultan Syarif Kasim Riau State Islamic University. Students who were selected as respondents in this study were students with active status in the odd semester of 2021/2022. One of the criteria for selecting students in this study was the use of internet facilities. Respondent demographic information is presented in Table 1.

Tabel 1. Respondents Demographic Information

No.	Variables	Category	Frequency	Percentage
1	Residential Area	City	30	51.1
		Regency	11	19.0
		Subdistrict	17	29.3
2	Gender	Man	15	26.0
		Woman	38	65.5
3	Age	19-25 Years	35	60.3
		> 25 Years	23	39.6
4	Work	Student	35	60.3
		Teacher	20	34.4
		Lecturer	3	5.1
5	Certification Status	Already Certified	23	39.6
		Not Certified	35	60.3

Instruments

This study uses an online questionnaire as a measuring tool. Questionnaires were submitted to measure student evaluations of the use of LKPD in certain aspects such as the suitability of LKPD and the learning model used, the suitability of using LKPD and learning methods, the completeness and arrangement of descriptions on LKPD, the use of spelling language in words and sentences, the graphical component of the questionnaire in this study consists of 27 items with a Likert scale provided, where 1 - very poor, 2 - not good, 3 -fairly good, and 4 -good 5-Very good. The distribution of items in the online questionnaire is presented in Table 2. The reliability index of this questionnaire was analyzed using Cronbach's alpha which was 0.940, and was interpreted as high and met the requirements for use in real research (Pallant, 2002; Joseph F. Hair et al, 2006).

Tabel 2. Distribution of LKPD Use Questionnaires

No.	Construct	Number of Items
1	Suitability of LKPD and The Learning Model Used	6
2	Appropriate Use of LKPD and Learning Methods,	4
3	Completeness and Arrangement of Descriptions on LKPD	7
4	Use of Language Spelling Words and Sentences	5
5	Graphic Components	5

Data Collection Procedures

This research is a survey research conducted using a questionnaire given to students from various study programs at Sultan Syarif Kasim Riau State Islamic University. Respondents were told that their answers were considered very important for use in research and they were asked to answer questions honestly. As an introduction, the researcher provides a brief description of LKPD and its use in the learning process.



Figure 1. LKPD Cover and Excess LKPD

The prefix aims to attract students' attention before entering the content. Apart from that, it is also to provide an initial picture of what are the weaknesses and shortcomings of the initial presentation. We clarify LKPD as an instructional design for integrating technology in lecture classes. LKPD cover and the advantages of LKPD are explained in [Figure 1](#).

Respondents were asked to open LKPD to evaluate or provide views on the INQUIRY LEARNING-based LKPD by answering the Questionnaire. Finding INQUIRY LEARNING-based worksheets developed by researchers on the link allows researchers to get data easily without having to come to the research location. All data collection procedures are carried out with flexibility and accessibility by utilizing internet and e-mail facilities. Data obtained from distributing online questionnaires were then analyzed descriptively quantitatively using SPSS version 23.00 for Windows.

RESULTS AND DISCUSSION

Results

The preparation and method for developing evaluation instruments for the use of LKPD in this study were carried out using the 4D development model. This research begins with conducting a 4D study to formulate a construct for evaluating the use of LKPD. The developed LKPD includes activities that can improve student performance during learning. Based on this, the development of LKPD guided consultation hours for respiratory materials was reviewed. Regarding the implementation, research and preparation of LKPD that meet the applicable criteria. The application of the developed LKPD is: LKPD aims to study breathing material according to the characteristics, learning objectives and learning environment of students, in this case LKPD is used in class. In LKPD, learning is developed more student-centered (learner oriented), so it is hoped that there will be development. LKPD can improve student performance and skills. More details will be discussed in this discussion.

Based on a study of various theories about evaluating the use of LKPD, finally five constructs for evaluating the use of LKPD for students were compiled. Namely: the suitability of the LKPD and the learning model used, the suitability of using the LKPD and learning methods, the completeness and layout of the descriptions on the LKPD, the use of spelling words and sentences, the graphical component. LKPD was evaluated by students as respondents by assessing five aspects, namely the suitability of the LKPD and the learning model used, the suitability of using the LKPD and learning methods, the completeness and layout of the descriptions on the LKPD, the use of spelling words and sentences, and the graphical component. Detailed information about the average value for each aspect is presented in [Table 3](#).

Table 3. Average Score for Five Evaluation Aspects

No.	LKPD	Means	Std. Deviation
1	Suitability of LKPD and The Learning Model Used	3.86	0.662
2	Appropriate Use of LKPD and Learning Methods	3.90	0.731
3	Completeness and Arrangement of Descriptions on LKPD	3.94	0.654
4	Use of Language Spelling Words and Sentences	3.89	0.654
5	Graphical Components	3.84	0.681
6	Valid N (Listwise)		
Average		3.88	0.676

From [Table 3](#) it can be seen to what extent the use of LKPD according to students of Sultan Syarif Kasim Riau State Islamic University is at a good stage, namely the suitability of LKPD and the learning model used (3.86); Appropriate use of LKPD and learning methods (3.90); Completeness and arrangement of descriptions on LKPD (3.94); Use of spelling language for words and sentences (3.89); Graphical components (3.84). Students have a very good perception of the use of LKPD because it has mode 3. Thus, it can be concluded that students at Sultan Syarif Kasim Riau State Islamic University are students who have an average perception of 3.88 in the good category.

LKPD as a learning medium can develop skills, such as process skills, students can discover and develop their own facts and understanding, as well as foster motivation and interest in learning. Systematic and interesting learning materials encourage independent learning outside the classroom. Thus, learning continues until students master the material presented, can also support and expedite the teaching and learning process by creating interaction between students and teachers, and can increase student motivation and interest in learning.

Discussion

The results showed that each aspect assessed in the use of Inquiry Learning-Based Worksheets was responded well by the respondents. For more details will be discussed in this discussion. In the suitability aspect of LKPD and learning models, the results of the study show that the use of LKPD has met the suitability aspects of LKPD and learning models. In developing teaching materials, it is necessary to pay attention to the development model. In developing educational materials must pay attention to the development model to ensure the quality of educational materials that support the effectiveness of learning (Cahyadi, 2019). This is done so that the results of the learning LKPD are feasible to be applied in the learning process (Puspita, 2019). Use LKPD independently in learning activities needs to be supported by learning models that can make students play an active role in learning activities (Astuti et al., 2018). Learning with the LKPD system combined with inquiry-based learning methods provides opportunities for students to explore more based on their own abilities to create more independent learning, changing the tendency of learning which was originally only teacher-centered. about the students themselves (Amalia et al., 2019). When applied, it assumes that Inquiry Learning model helps students understand the material, because in learning students are required to be active (Yuristia et al., 2022).

In the aspect of the suitability of using LKPD and learning methods, the results showed that the use of LKPD had met the suitability aspects of using LKPD and learning methods. This is because LKPD has directed the development of students to carry out collaborative and cooperative learning. This LKPD uses the Inquiry Learning Model which in the process of its application can improve student achievement (Nurhasanah et al., 2021). The inquiry-based science learning material aspect of LKPD is a direct learning method that guides students' thinking so that they are able to solve problems (Reza et al., 2018).

Developing guided-based worksheets makes learning easier to understand. This is beneficial for students because students can study independently from home, and for teachers as instructors it is easier to convey material because students already understand the lessons they will learn later (Putra & Elfizon, 2020). One of the teaching methods specifically designed to support student learning processes in accordance with well-structured problem knowledge and process knowledge as well as a step-by-step action model (Lesmono et al., 2012). Interesting teaching materials and can help students achieve the competencies specified by using different learning methods to increase student participation in the learning process (Astuti et al., 2018).

In the aspect of completeness and arrangement of descriptions on LKPD, the results of the study show that the use of LKPD has met the aspects of completeness and arrangement of descriptions of LKPD. This is because LKPD has a complete description or sequence, starting from the title, student identity, basic competencies, implementation instructions, learning objectives, clear material and pictures and there is a student summary. LKPD can be developed in various ways, including through adaptation, compilation and self-writing (Nurdyansyah & Mutala'liah, 2015). Innovative and creatively constructed worksheets are able to become interesting teaching materials and motivate students to learn (Lesmono et al., 2012).

In the aspect of language use, spelling of words and sentences, the results showed that the use of LKPD met the aspects of language use, spelling of words and sentences. This is because the LKPD used must have clear instructions for use, use language that is easy to understand, encourage curiosity, increase knowledge, add insight. The language assessment component consists of suitability for the level of development of students' thinking, students' understanding of a message, accuracy of grammar and spelling. The first language component is language appropriate to the

student's developmental level, which allows concepts and illustrative examples to be explained and individual examples to be described as abstract examples appropriate to the student's level of understanding and age (Larasati et al., 2018). LKPD is a teaching material that is arranged systematically according to the level of knowledge of students in a language that is easy to understand and can be used for independent study and with that assistance the desired learning objectives are achieved (As'ari, 2019). One of the factors that need to be considered in developing educational materials is educational materials that are in accordance with the curriculum and student needs. Teaching materials in accordance with the characteristics of students and their environment (Weriyanti et al., 2020).

In the aspect of the graphical component, the results showed that the use of LKPD had fulfilled the graphical component aspects. This means that LKPD has the appropriate color layout, matching layout, use of image sizes, use and selection of appropriate fonts and clarity of images and available supporting tables. Understanding is not just to understand the information, in other words students can change the information in their minds into other forms that are more meaningful and interesting (Arimurti et al., 2019).

Learning materials LKPD is an independent student learning package that contains a series of learning experiences that are systematically designed and created to help students achieve their learning goals (Junior et al., 2019). LKPD is a teaching material that is arranged systematically and interestingly which includes material content, methods and evaluations that can be used independently (Akbarita & Narendra, 2019). So LKPD as material or media in learning determine learning methods that can benefit students so that the achievements achieved are of higher quality (Fabiana, 2019). LKPD IPAdesigned with an attractive layout and selection of illustrations to facilitate students' understanding of the material to focus students' attention on learning. Thus the use of LKPD can increase students' learning interest and motivation and also improve students' thinking skills.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that the evaluation of the use of inquiry learning based LKPD among students is in the good category. This can be seen from the five components, namely the suitability of the LKPD and the learning model used (3.97), the suitability of using the LKPD and learning methods (3.90), the completeness and arrangement of descriptions on the LKPD (4.05), the use of language, spelling words and sentences (4.00), graphical components (4.00). Students have a very good perception of the use of LKPD because it has mode 3. Thus, it can be concluded that students at Sultan Syarif Kasim Riau State Islamic University are students who have an average perception of 3.98 in the good category. Lecturer, Teachers and students as agents of change in education should be open-minded towards changes and alternatives offered by education to improve the quality of learning. The role of this research is expected to be very helpful in dynamic educational situations by providing innovative and creative teaching materials, improving the quality of science learning for students, and also helping to write scientific papers in a systematic way. We recommend that before being evaluated, it is necessary to conduct an initial study first to test the effectiveness of using inquiry learning based worksheets.

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