

THE DEVELOPMENT OF E-LKPD USING BOOK CREATOR ON FRACTION OPERATIONS MATERIAL IN ELEMENTARY SCHOOL

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Received January 08, 2022; Revised June 14, 2022; Accepted June 27, 2022

Abstract:

Through the online learning system that has been implemented, many problems arise. The online teaching and learning process causes students to feel bored while learning and does not fully convey the material to students. The purpose of this study was to determine the process of developing E-LKPD which was made by the author of the book. This research is a research and development (R&D) research using the DDD-E model (Decide, Design, Develop, and Evaluate). Sources of data in this study were three teachers and students. The instrument used in this study was a questionnaire distributed to teachers and students. E-LKPD was developed by fulfilling the valid, practical, and effective criteria. E-LKPD is declared valid with an average result of 88% with very feasible criteria. E-LKPD is declared practical with an average result of 88% with very good criteria. E-LKPD is declared effective with an average result of 94% with very good criteria. It is concluded that the E-LKPD is very suitable for use for elementary school students and is able to increase understanding and motivation to learn fractional arithmetic operations.

Keywords: Elementary School E-LKPD, Fraction Operation, DDD-E Model

PENGEMBANGAN E-LKPD MENGGUNAKAN BOOK CREATOR PADA MATERI OPERASI HITUNG PECAHAN DI SEKOLAH DASAR

Abstrak:

Melalui sistem pembelajaran online yang telah diterapkan, banyak permasalahan yang muncul. Proses belajar mengajar yang dilakukan secara online menyebabkan siswa merasa bosan saat belajar dan tidak sepenuhnya menyampaikan materi kepada siswa. Tujuan dari penelitian ini adalah untuk mengetahui proses pengembangan E-LKPD yang dibuat dengan Book Creator dan mengetahui kevalidan, kepraktisan, dan keefektifan E-LKPD. Penelitian ini merupakan penelitian research and development (R&D) dengan menggunakan model DDD-E (Decide, Design, Develop, and Evaluate). Sumber data dalam penelitian ini adalah tiga orang guru dan siswa. Instrumen yang digunakan dalam penelitian ini adalah angket yang dibagikan kepada guru dan siswa serta lembar observasi. E-LKPD dikembangkan dengan memenuhi kriteria valid, praktis, dan efektif. E-LKPD dinyatakan valid dengan hasil rata-rata 88% dengan kriteria sangat layak. E-LKPD dinyatakan praktis dengan hasil rata-rata 88% dengan

kriteria sangat baik. E-LKPD dinyatakan efektif dengan hasil rata-rata 94% dengan kriteria sangat baik. Disimpulkan bahwa E-LKPD sangat cocok digunakan untuk siswa sekolah dasar dan mampu meningkatkan pemahaman dan motivasi belajar operasi hitung pecahan.

Kata kunci: E-LKPD SD, Operasi Hitung Pecahan, Model DDD-E

How to Cite: Setiawan, T. Y, & Fikri, A. (2021). The Development of E-LKPD Using Book Creator on Fraction Operations Material in Elementary School. *MaPan : Journal of Mathematics and Learning*, 10(1), 116-126. <https://doi.org/10.24252/mapan.2022v10n1a8>.

INTRODUCTION

The Covid -19 virus that hit Indonesia had a very significant impact on all aspects, including the education aspect. Covid 19 is a virus that can be transmitted between humans. This virus spreads very fast. Requires the government to take action to break the Covid-19. As a result, the government issued various policies to suppress the transmission of the Covid-19 virus. One of the policies issued by the government through the circular letter of the minister of education and culture number 4 of 2020 regarding the prevention of the covid-19 virus in education units. The teaching and learning process in Indonesia takes place online according to the circular. This online learning process is being carried out for the first time so it has never been tested and measured before (Noviyanti, Kurniawan, & Alirmansyah, 2020).

Online learning done at home provides new habits for students and parents who are usually busy with routines outside the home. Apart from students and parents, teachers as educators also feel the impact of this learning, where previously the learning process was carried out in the classroom, but now has to switch online. This online learning process certainly cannot succeed without the direct role of teachers, because they are the frontline of educational institutions (Putria, Maula, & Uswatun, 2020). Teaching and learning activities were previously carried out by teachers and students at school or through direct interaction without using the media. Now they are required to experience changes in the learning process (Joshi, Vinay, & Bhaskar, 2020).

Through the online learning system that has been implemented, not a few problems have arisen, ranging from subject matter that has not been fully delivered by the teacher, to the many tasks given to students to access to

information that is constrained due to the difficulty of learning, internet connection and signals in accessing that information (Siahaan, 2020). Good service in elementary schools results in students having greater opportunities at the next school level (Noviyanti, Kurniawan, & Alirmansyah, 2020). Therefore, problems and shortcomings in online learning must be immediately corrected and resolved. In addition to these problems, the online teaching and learning process also causes students to feel bored when learning takes place and lacks mastery of the concepts of the material being taught. Based on the problems above, student worksheets are needed that can be done independently by students in this online learning. A student worksheet (LKPD) is a means of supporting the teaching and learning process that is designed in such a way and composed of brief descriptions of material and questions arranged as exercises to support the learning process (Kusumawati, 2017).

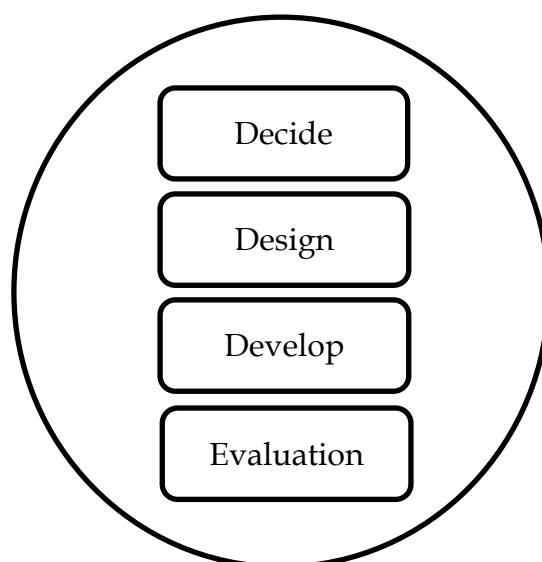
The effective use of LKS for use in online learning is E-LKPD. The use of E-LKPD has advantages, including being able to simplify and reduce distance and time so that the teaching and learning process becomes more effective and can be a learning tool that attracts student learning interest (Syafitri & Tressyalina, 2020). Therefore, teachers are expected to be able to create and develop learning tools that can help the learning process. In online learning, teacher performance is assessed and seen when carrying out learning. Performance is the ability and embodiment in the form of work and work that has been achieved by the teacher to achieve the goal (Muazza, Sari, Noviyanti, Hendra, Harja, & Hidayat, 2019).

In this study, an E-LKPD will be developed which is packaged in the Book Creator application on fractional material in elementary schools. The advantages of the developed E-LKPD are: 1) worksheets are developed online; 2) equipped with videos and pictures that can provoke students' visualization in understanding abstract material; 3) have a display that attracts student learning interest. The purpose of developing this E-LKPD is to produce worksheets that are effective and able to measure the level of students' understanding of fractions. With the advantages that have been described, researchers are interested in researching the development of E-LKPD on fractional materials in elementary schools.

METHODS

The research was conducted using the Research and Development (R&D) method or commonly referred to as development research. The method in R&D research is used because the researcher at the end of the study will produce a product (Apriliani, Maksum, Wardhani, Yuniar, & Setyowati, 2021). The final result of this research is the E-LKPD on fractional material. E-LKPD is created using Book Creator which is accessed through Google.

The development of E-LKPD in this study uses the DDD-E development model. The DDD-E development model is one of the development models in which at each stage there is an evaluation process (Juniari & Putra, 2021). In the E-LKPD development model using DDD-E there are 4 stages, namely, decide, design, develop, and evaluation (Havizul, 2019). In the first stage, namely the decision stage, the researcher determines the basic competencies, indicators, and learning objectives. The second stage is the design stage, at this stage, the researcher makes a flowchart that is used as an alloy to make E-LKPD. The flowchart consists of the title, author profile, KD, indicators, objectives, brief material, and evaluation. The third stage is the development stage (develop), the researcher makes the E-LKPD referring to the results of the design stage according to the flowchart. In the last stage, namely evaluation, the evaluation stage is carried out at all stages. starting from the stage of determining, designing, and developing. These stages can be seen in the following graph.



Gambar 1. DDD-E Development Model

The data sources in this study were teachers and students. Teachers and students will be asked to provide feedback through teacher and student responses about the E-LKPD. Data collection techniques, the tool used to collect data in this study is a questionnaire/questionnaire. The data generated from this research are in the form of product assessment scores, and responses from teachers and students. This research uses a descriptive quantitative statistical analysis method. Quantitative descriptive statistical analysis was used to process the data obtained from the questionnaire in the form of scores (Arsana & Sujana, 2021).

The data that has been obtained is then analyzed using the formula.

$$P = \frac{\sum x}{\sum xi} \times 100\% \tag{1}$$

Information:

P = Percentage of Eligibility

$\sum \chi$ = Total Score obtained

$\sum \chi_i$ = Total Score

To conclude and find out the results of research and make decisions in determining the validity, effectiveness, and practicality of E-LKPD, used a scale conversion with the following criteria.

Table 1. Range Criteria

No.	Percentage (%)	Criteria
1	81%- 100%	Very Eligible (SL)
2	61%- 80%	Eligible (L)
3	41%- 60%	Fairly Eligible (CL)
4	21%- 40%	Less Eligible (KL)
5	< 20%	Not Eligible (TL)

RESULTS AND DISCUSSION

The final result of this research is the product of the Electronic Student Worksheet (E-LKPD) made by the book creator. In learning that uses LKPD in the process, students will gain knowledge independently through activities in LKPD (Arsana & Sujana, 2021). The development of E-LKPD is carried out for arithmetic operations on fractions using the DDD-E model. In the use phase, a small group trial was conducted. In this study, the developments carried out by DDD-E researchers are.

1. Decide

In the early stages of the DDD-E model, namely determination. E-LKPD is an option for teachers to train and provide understanding to students. The teacher has a choice of E-LKPD which is one of the student activities both in terms of themes and parts of subjects that can be made E-LKPD (Sulistiyorini, Harmanto, Abidin, & Jaino, 2018). At this stage, the researcher determines the theme and scope of the E-LKPD that will be developed. The next researcher determines the basic competencies, indicators, and goals to be achieved through the E-LKPD. In the developed E-LKPD, students are expected to understand what a fraction is and perform fractional operations. E-LKPD can be used on smartphones or laptops that are connected to the internet. The skill prerequisite for students who will use the E-LKPD is that students must be able to operate or use smartphones or laptops well.

2. Design

In the second stage of the DDD-E development model, namely the design or planning stage of the E-LKPD. At this stage, the researchers designed the E-LKPD product. In this study, a computer or laptop is the main tool for developing E-LKPD, the specifications of the laptop used by the researcher are an Intel processor and 4 GB RAM and the type of system is a 64-bit operating system. Furthermore, researchers used bookmakers in making E-LKPD. The author of the book can be accessed through Google by using the internet network. Making the display on the E-LKPD based on the flowchart that has been made. In the early stages of its manufacture, researchers collected images and icons obtained from the internet and cut them. After the cropping process is complete, they are combined to create an attractive appearance on the E-LKPD.

3. Developing

At the development stage, the E-LKPD is created and developed according to the results at the design stage. E-LKPD consists of cover, author's identity, learning instructions, core competencies, basic competencies, indicators, objectives, materials, and exercises as well as a bibliography. The cover of the E-LKPD consists of the title E-LKPD, and student identity with additional visuals in the form of images that match the title of the E-LKPD. The material section of the E-LKPD contains an explanation of fractions and fraction counting operations. In the practice section, questions are presented that hone students' abilities after reading and understanding the material that

has been studied. In the practice section, questions are presented with colors and dance forms that make students interested in trying. The exercises or tests are arranged based on learning objectives and become a benchmark for students' abilities from three aspects, namely aspects of knowledge, attitudes, and skills (Amali, Kurniawati, & Zulhiddah, 2019). After the E-LKPD is completed, it is assessed by the teacher and tested on students. The created E-LKPD is by following the material and subject matter in class. In addition, E-LKPD is also very supportive of the online learning process. Students can learn and practice using the E-LKPD independently anywhere and anytime. The assessment carried out by the teacher aims to see and measure the feasibility of the E-LKPD. The assessment given by the teacher will later be used as improvement material for the developed E-LKPD. At this assessment stage, the developer provides a questionnaire to the teacher using the assessment instrument provided by the developer.

In the next stage, after the evaluation of the E-LKPD, has been completed by the teacher and is feasible to be tested by students, the next researcher conducts the E-LKPD test. The trial implementation of the E-LKPD product is distributed through a link that can be accessed or opened by students via their respective smartphones. Before being tested, the developer explains in advance how and functions of using the E-LKPD. After that, the developer shared the link in the WhatsApp message for students to access. The distribution of the E-LKPD link aims to obtain responses and responses as well as measurements regarding the E-LKPD.

4. Evaluation

The evaluation stage is the last stage of this research. At this last stage, the researcher evaluates and revises as a whole if there are still errors or deficiencies that need to be corrected. Evaluation is carried out at each stage that aims to improve LKS, this evaluation is called formative evaluation (Wandari, Kamid, & Maison, 2018). At the determination stage, there is an evaluation in the part of determining the scope of the material and objectives. At the design or design stage, there is an evaluation of the text and illustrations. Furthermore, at the development stage, there is an evaluation based on the results of the teacher's assessment, the assessment is used as a reference to improve and increase the effectiveness of the E-LKPD. After evaluating at each stage and conducting several trials with students, the evaluation is used as a refinement of the E-LKPD.

In this study, the validity of the E-LKPD was determined from the results of the E-LKPD validation questionnaire filled out by 3 teachers. The E-LKPD validation questionnaire considers several aspects, namely aspects of content, presentation of material, and language. The results of the reviews from the teachers are presented in table 2 and the results of the validity are presented in table 3.

Table 2. Results of E-LKPD

Review	Results
Teacher	<ol style="list-style-type: none"> 1. There are still errors in writing the 2. Exercise Instructions It is not clear The 3. questions presented are not contextual. Questions

Table 3. Validity Analysis

Reviewer	Percentage	Criteria
for MYS Teachers	88%	Very Eligible
Teacher M	84%	Very Eligible
SL Teacher	91%	Very Eligible
Average	88%	Very Eligible

The validation results can be concluded that the E-LKPD using Book Creator is declared valid.

In addition, at the evaluation stage, researchers conducted an analysis of the quality of E-LKPD in terms of practicality and effectiveness. The results of the practicum analysis carried out by researchers can be seen in table 4.

Table 4. Results of

Practicality Analysis	Percentage	Criteria
Teacher Response	84.3%	Very Good
Observation of Learning Implementation with E-LKPD	91.6%	Very Good
Average	88%	Very Good

Based on the results of the practical analysis in table 4, the teacher's response questionnaire score got a percentage of 84.3% with very good criteria. The observation sheet on the implementation of learning with E-LKPD obtained a percentage of 91.6% with very good criteria. The average obtained from teacher response questionnaires and observation sheets on the

implementation of learning with E-LKPD is 88% with very good criteria. From these results, the E-LKPD used is stated to be practical to use and utilize.

The results of the effectiveness analysis obtained from the student response questionnaire sheets and observation sheets on the use of E-LKPD can be seen in table 5.

Table 5. Results of Effectiveness

Analysis	Percentage	Criteria
Student Response	96%	Very Good
Observation Sheet Using E-LKPD	92%	Very Good
Average average	94%	Very Good

Based on the results of the questionnaire analysis of student responses to the E-LKPD obtained a percentage value of 96% with the criteria of "very good". The results of the observation sheet on the use of E-LKPD were obtained with a percentage value of 92% with the criteria of "very good" with an average of 94% "very good". So that the E-LKPD used is declared effective to be used and utilized in facilitating children to practice and understand the material through the E-LKPD.

The following is the final product of the E-LKPD which has been completed through the entire development of the DDD-E model and has passed the trial.



Figure 1. Final Results of E-LKPD

CONCLUSION

Based on the results of research and development of E-LKPD conducted through BOOK CREATOR on fractional counting operations material, it can be concluded that E-LKPD is declared valid, practical, and effective to use. From the assessment of the E-LKPD from the practical and effective aspects, it can be concluded that the E-LKPD developed is very suitable for use for elementary school students and is able to increase understanding and motivation to learn fractional arithmetic operations.

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