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Development of Live Worksheet-Based E-LKPD in Elementary School for Thematic Learning

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Abstract

The Covid-19 pandemic has made face-to-face learning become virtual. The need for student worksheets is very important for the learning process. It is demanded that distance learning must utilize technology by making E-LKPD. This study aims to develop a Live Worksheet-based E-LKPD in thematic learning in elementary schools. This stage adapts Rowntree's development research model combined with Teasmer evaluation, namely the planning, development, and evaluation stages followed by the self-evaluation stage, expert evaluation, one-on-one test, small group test, and field test. The E-LKPD was tested by experts and 5th-grade students of SDN 19 Rambang Niru. Data were collected by observation, interviews, questionnaires, and tests. The data analysis technique uses analysis of interview results, validation results, questionnaires, and test results. The research analysis on the development of E-LKPD based on Live Worksheets on Thematic materials can be described that 1) E-LKPD using Live Worksheets has been tested for validity by 3 experts with 92.3% results; 2) E-LKPD uses Live Worksheets on thematic materials that have been tested for practicality with the percentage of practicality in the one-on-one test phase with 83.3% results and the small group stage with 84.4% results; 3) the effectiveness of E-LKPD using Live Worksheet for the learning process gets an N-gain of 0.60 in the medium category. This study concludes that the E-LKPD using the Live Worksheet that was developed has been tested to be valid, practical, and effective. 1) E-LKPD using Live Worksheet has been tested for validity by 3 experts with 92.3% results; 2) E-LKPD uses Live Worksheets on thematic materials that have been tested for practicality with the percentage of practicality in the one-on-one test phase with 83.3% results and the small group stage with 84.4% results; 3) the effectiveness of E-LKPD using Live Worksheet for the learning process gets an N-gain of 0.60 in the medium category. This study concludes that the E-LKPD using the Live Worksheet that was developed has been tested to be valid, practical, and effective.

INTRODUCTION

The condition of the Covid-19 pandemic has affected the education system in the world so that most activities are temporarily closed, without exception in the world of education where the face-to-face learning process is shifted to face-to-face, this is an effort to prevent the spread of the virus (Herliandry & Suban, 2020). The existence of this problem requires educators to find learning solutions using technology to solve online learning problems. Besides that, opinion (El Iq Bali, 2019) said that the development of information technology has been modern and sophisticated because it can carry out teaching and learning activities without face to face directly, meaning that students can be in different locations by conducting remote interactions.

Distance learning is a learning activity that is carried out remotely or at different locations in the hope of achieving the expected learning objectives (Prawiyogi, Anggi Giri, 2020). All levels of education have implemented online learning without exception for elementary school children who are required to be technology literate both by educators and students in the hope of facilitating the learning process. According to (Wahyuni et al., 2016) Thematic learning is a learning that has been structured through a network of themes where each subject concept is interrelated so that it can make it easier for students to understand a concept from one theme for several lessons to be taught. Furthermore, according to (Lubis & Azizan, 2018) thematic learning is a combination and combination of several subjects arranged into one integrated subject. For Learning activities carried out in the classroom, an educator needs to prepare learning tools to assist the process of delivering learning activities, one of which is by making Student Worksheets (LKPD). According to (Umbariyati, 2016) LKPD is one of the means to assist and facilitate teaching and learning activities so that effective interaction will be formed between students and educators it is expected to increase student activities in learning outcomes. Other opinion (Widodo, 2017) It is said that LKPD is a student activity sheet in learning that is used as a stimulus to help students think at higher levels. One of the platforms that can be used to create an E-LKPD is a Live Worksheet. This site can be easily accessed via Google and students can do their assignments online, and its manufacture is fairly easy because worksheet templates have been provided that can be used as references (E. D. Putri & Amini, 2021).

The results of interviews conducted by researchers with 5th-grade educators at SDN 19 Rambang Niru showed that they had used LKPD in the form of paper sheets in learning activities but had never created and used electronic-based LKPD (E-LKPD) so learning activities during this pandemic period only through the WhatsApp application. Therefore, to overcome this problem, it is necessary to develop E-LKPD. Based on the results of research conducted by (Rahayu et al., 2021) that the development of E-LKPD on thematic learning is valid and practical for use in learning in elementary schools. Likewise, the results of research conducted by (Noprinda & Soleh, 2019) that the HOTS-based physics learning worksheet is very feasible, and practical and gets a good response from educators and students. As well as the results of research conducted by (Farman et al., 2021) wrote that the development of E-LKPD using Live Worksheets for learning Mathematics during the pandemic period is very valid and practical. Therefore, the researcher will continue the research by developing E-LKPD on thematic learning of Theme 5 Sub-theme 1 in Grade V of Elementary School.

METHODS

This research was conducted at SDN 19 Rambang Niru located on Jln. Pertamina Suban Jeriji Village, Kec. Rambang Niru Kab. Muara Enim. The subjects of this study were of

two types, namely: the subject of development, namely the E-LKPD product, and a subject of research involving 29 5th-grade elementary school students. The time of research was carried out in the 2021/2022 academic year in the even semester.

The type of research used in this research is development research. This study aims to produce electronic student worksheets (E-LKPD) using Live Worksheets on Theme 5 Sub-theme 1 in grade 5 Elementary School. The development model used in this study is the Rowntree model combined with Tessmer's evaluation with steps including Planning, Development, and Evaluation followed by self-evaluation, expert review, one-to-one test, small group test, and field test. Data collection techniques in this study used observation and interviews, walkthroughs, questionnaires, and tests. The following are the steps of the Rowntree model combined with the Tessmer evaluation.

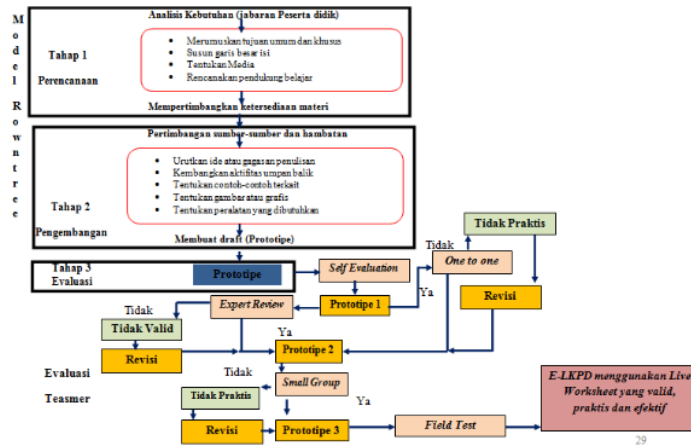


Figure 1. Rowntree Development Flow and Tessmer Evaluation (K. E. Putri, 2019)

RESULTS AND DISCUSSIONS

1) Planning Stage Results

Development research begins with steps at the planning stage, namely the description of students, the formulation of general and special objectives, the composition of the outline of the content, determining the media, learning support plans, and consideration of existing teaching materials.

Analysis of student characteristics was conducted by interviewing teachers who teach in grade 5 at SDN 19 Rambang Niru to find out the description of the students. Students in grade 5 have differences in ethnicity, learning style, gender, intelligence level, economic level, need for innovation in teaching materials, and social. The results of interviews with researchers and classroom teachers can be concluded that for online learning, teachers and students also really need innovative teaching materials that are practical, interesting, and easy to use by teachers to provide lessons and for students to learn using the help of smartphones, one of which is worksheets teaching materials. students who are innovated from sheet form to electronic form. Then by looking at the learning outcomes of students in thematic learning, it can still be seen that many students get scores below the minimum specified minimum completeness criteria (KKM) where there are still many students who get an average score of 60 with the specified KKM of 70. As an effort to help students learn by using innovations from the teaching materials used, it is necessary to develop electronic student worksheets (E-

LKPD) in thematic learning. The next planning stage is an analysis of general and specific objectives that are carried out so that the E-LKPD products produced are by following the characteristics of students and are in accordance by the learning objectives that will be achieved by students in thematic learning. to help students learn by using innovations from the teaching materials used, it is necessary to develop an electronic student worksheet (E-LKPD) in thematic learning. The next planning stage is an analysis of general and specific objectives that are carried out so that the E-LKPD products produced are by following the characteristics of students and by following the learning objectives that will be achieved by students in thematic learning. to help students learn by using innovations from the teaching materials used, it is necessary to develop an electronic student worksheet (E-LKPD) in thematic learning. The next planning stage is an analysis of general and specific objectives that are carried out so that the E-LKPD products produced are by following with the characteristics of students and by following the learning objectives that will be achieved by students in thematic learning.

After knowing the learning objectives to be achieved, the next step is to determine the outline of the material contained in this E-LKPD, namely in Theme 5 Sub-theme 1 regarding fiction and non-fiction text material, food chain concepts, types of ecosystems, scales, efforts to build unity and unity at home, school and community, geographical location and the big islands in Indonesia.

The next stage is to determine the media to be developed. In this development, the Student Worksheet was chosen as the electronic media. This electronic media was chosen as a form of innovation from teaching materials that have been used and supported also by following the conditions of the covid-19 pandemic so that students learn to use technology as a learning support facility to keep it running. This E-LKPD can be accessed by students at home and can also be used anywhere by utilizing their smartphone. After determining the media to be developed, the next step is to plan learning support. The platform used to support the development of this E-LKPD product is assisted by Live Worksheet software which can display the form of student worksheets that include videos, audio, as well as pictures that can move (interactive) for electronic learning students. The next stage is the consideration of existing teaching materials. These existing teaching materials serve as material for compiling the contents of the developed E-LKPD.

2) Development Stage

This development stage begins by considering the sources and constraints. Based on the results of observations and interviews with 3 teachers that have been carried out, it is clear that there is a need for innovation in teaching materials used for teaching teachers and used by students to learn during the pandemic and the use of teaching materials, especially LKPD, not all teachers and students use electronic teaching materials that are practical, easy and interesting to use in online learning.

Sequencing ideas or writing ideas followed by compiling an outline of the contents, namely by making a flowchart of the E-LKPD. The description of the material contained in the E-LKPD uses a Live Worksheet for Theme 5 Sub-theme 1, namely (1) fiction and non-fiction texts; (2) the concept of the food chain; (3) types of ecosystems; (4) scales; (5) efforts to build unity and unity in the home, school, and community; (6) geographical location and large islands in Indonesia.

Determining related examples is the stage after compiling the outline of the content. These examples include ecosystem components in the environment. Then proceed with determining the image or graphic on the E-LKPD which was developed by making a Storyboard. The next stage is to determine the equipment needed, namely computer or laptop hardware, Live Worksheet software, and smartphones. Then proceed with formulating the



physical form of the product being developed in the form of an E-LKPD that can be accessed on a smartphone by logging in using the username and password that has been provided.

3) Evaluation Stage

a. Self Evaluation

Activities in this self-evaluation are carried out by assessing the draft that has been made by the researcher. At this stage, the researchers carried out their repair activities on the E-LKPD product that had been made to minimize writing errors.

Table 1. Results of Self Evaluation

Before revision	Coment	After Revision
	Improvements made to the identity of the E-LKPD were carried out by changing the background, and slide frames, improving the type of writing, and adding KI, KD, Indicators, Learning Objectives, and Work Instructions. This improvement is intended so that students can easily see KD, Objectives, and Instructions in working on E-LKPD	

b. Expert Review

Prototype 1 of the developed E-LKPD was validated by three experts, namely linguists, learning materials experts, and product design experts. The data generated from expert validation is in the form of qualitative data containing comments and suggestions from the validator which is used as the basis for improving the prototype. In addition, it also contains quantitative data obtained from the calculation results of the validator's assessment using a Likert scale which is used as the basis for determining the level of validity of the developed E-LKPD.

Table 2. Expert Review Results

No	Validation	Percentage (%)	Category
1	Language	94.2	Very Valid
2	Theory	88.5	Very Valid
3	Design	94.2	Very Valid
	Average	92.3	Very Valid

The expert review stage of the E-LKPD product using the Live Worksheet proved that from the language, material, and design aspects, an average of 92.3% was categorized as very valid. Very valid category based on opinion (Okta & Muhammadiyah, 2021) namely the range of 81-100%. This is also inseparable from the input of expert validators who stated that E-LKPD using Live Worksheets was worth testing with revisions and suggestions. In line with the research conducted by (Prastika & Masniladevi, 2021) with the results of the Development of Regular and Irregular Multidimensional Interactive E-LKPD Based on Liveworksheets on the Learning Outcomes of Class IV Elementary School Students, the results are that the interactive E-LKPD in terms of many regular and irregular based Liveworksheets are very valid with the percentage 95,83% and 93,41% and effectively used in learning mathematics for fourth-grade elementary school with a percentage of 82,9%.

c. One-to-one test

This one-on-one evaluation activity involved three students in class 5B SDN 19 Rambang Niru. This stage is carried out to test the practicality of E-LKPD products using Live Worksheets with material Theme 5 Subtheme 1, the E-LKPD consists of 6 worksheets, then the students who represent in this activity are one student with above-average abilities, one student with moderate ability and one student with below average, namely FD, HOL, and WD. The results of the one-to-one test and expert review are used as a reference by researchers to make a prototype 2. Comments from students in the one-to-one test group on the practicality of E-LKPD products.

Table 3. Results One to One

No	Name	Percentage (%)	Category
1	FD	82	Very Practical
2	WD	86	Very Practical
3	HOL	82	Very Practical
	Average	83.3	Very Practical

Based on the results of the one-to-one trial, it can be concluded that the E-LKPD using the Live Worksheet that was developed is practical to use for learning with percentage 83,3% at the one-to-one test stage which was tested with 3 students. Then it can be concluded that the E-LKPD using the developed Live Worksheet is very practical to use for learning. Then In line with research (Wati et al., 2021) resulted that the use of E-LKPD using mobile learning web Live Worksheets on Newton's law was declared valid, practical used to learning with the percentage 82,02% (very practical).

d. Small-Group

Prototype 2 resulted from the revised evaluation input from experts and three students. Then proceed with doing a small group test. Students at this stage assess the evaluation of a small group with a total of 9 students with different abilities, social status, and economic status from the previous stage. This stage is carried out to test the level of practicality of prototype 2 from the point of view of students and uses the same assessment instrument as the one-to-one stage.

Table 4. Small-Group Results

No	Name	Percentage (%)	Category
1	AA	82	Very Practical
2	JH	82	Very Practical
3	KA	82	Very Practical
4	LJ	82	Very Practical
5	LP	86	Very Practical
6	MH	82	Very Practical
7	MDP	84	Very Practical
8	MLS	84	Very Practical
9	NA	96	Very Practical
	Average	84.4	Very Practical

Based on the results of the small group evaluation, it can be concluded that the use of the E-LKPD Live Worksheet in learning is very practical. After improving the E-LKPD product according to expert advice and testing the one-to-one stage, the product becomes prototype 2

which will be tested for practicality through the small group stage which is piloted by 9 5th grade students at SDN 19 Rambang Niru. The results obtained from the small group test showed a percentage of 84.4% with a very practical category. This is by following the opinion (Okta & Muhammadi, 2021) which states the range of 81-100% is a very practical category. E-LKPD products using Live Worksheets that have been developed can be concluded to be very practical at the small group stage. In line with research conducted by (Widiyani & Pramudiani, 2021) with the results of the research on the Development of Student Worksheets (LKPD) Based on Liveworksheet Software on Civics Materials, it was declared feasible and interesting to be used as a learning evaluation medium for fifth-grade students. Then research (Wati et al., 2021) resulted that the use of E-LKPD using mobile learning web Live Worksheets on Newton's law was declared valid, practical used to learning with the percentage 86,66% (very practical).

e. Field Test

This field test activity was carried out on prototype 3 of the E-LKPD product using a Live Worksheet that has been developed and has gone through a revision stage based on input from small groups. This field test phase aims to identify the effectiveness of the developed E-LKPD in improving student learning outcomes as seen from the results of learning tests before and after using the E-LKPD Live Worksheet. The beginning of the meeting was conducted by giving 20 multiple choice questions as pretest questions. The data from the students' pretest results are seen in the following.

Table 5. Pretest Results

Score	Predicate	Number of participants	Percentage (%)
90-100	Very good	0 Participants	0
80-89	Well	1 Participants	3.45
70-79	Enough	2 Participants	6.90
60-69	Not enough	6 Participants	20.69
0-59	Very less	20 Participants	68.97

Based on the data above, there are still many students who do not understand the material of ecosystem components so E-LKPD Live Worksheet assistance is needed as teaching materials used to assist the learning process which will have an impact on increasing student competence in learning.

Result Analysis Posttest, Posttest is given after students take part in learning using E-LKPD. The implementation of the post-test uses pretest questions that have been randomized as many as 20 multiple-choice questions. The recapitulation of the posttest results can be seen in the following table.

Table 6. Posttest Results

Score	Predicate	Number of participants	Percentage (%)
90-100	Very good	7 Participants	24.14
80-89	Well	14 Participants	48,28
70-79	Enough	7 Participants	24.14
60-69	Not enough	1 Participants	3.45
0-59	Very less	0 Participants	0

Based on the results of the posttest, there was an increase in the learning outcomes of students after using the E-LKPD Live Worksheet, which can be illustrated through the recapitulation diagram of the pretest and posttest results as follows.



Figure 2. Recapitulation of Pretest and Posttest Results

The comparison picture of the recapitulation of the pretest and posttest percentages shows that there is an increase in student learning outcomes. This can be seen from the pretest activities before using the E-LKPD Live Worksheet and the posttest activities using the E-LKPD Live Worksheet.

Effectiveness Analysis (N-gain) Assessment of effectiveness was measured using N-gain based on the average value of the pretest and posttest as shown in the following table.

Table 7. Results of N-gain

Pretest Mean	Posttest Average	N-gain
53.10	81.03	0.60
Category		Currently

The results of the pre-test data analysis of students showed an average of 53.10 which was categorized as low, while the results of the post-test data analysis of students showed an average of 81.03 with high categories. Then calculated by the formula N-gain obtained an average of 0.60 which indicates the high category. This is indicated by using the N-gain formula if the results are 0.3 – 0.7 then it is in the medium category (Meltzer, 2002). So it can be concluded that the E-LKPD using Live Worksheets is effective for improving student learning outcomes and is suitable for use as teaching materials to assist in the learning process in the classroom. In line with the research conducted by (Khikmiyah, 2021) with the results of implementing a Web Live Worksheet Based on Problem Based Learning in Mathematics Learning, it resulted that the use of E-LKPD in learning was able to increase students' activities in learning mathematics online with an average activity level. Then continued with research (Mispa et al., 2022) producing that the use of E_LKPD Live Worksheet can improve student learning outcomes with N-gain results from the control class 0,42 (medium) and 0,36 (medium) treatment class.

CONCLUSION

Based on the results of research that has been carried out on the development of E-LKPD using Live Worksheets on Material Theme 5 Sub-theme 1 in Grade V Elementary School, it can be concluded as follows. Produce E-LKPD products using a very valid Live Worksheet with validation in terms of language, materi, and design by experts (Expert Review) with notes on suggestions that must be improved, at the expert review stage the average value of the three validating expert validators is obtained, namely 92.3% according to opinion (Okta, 2021) the range of 81-100% with a very valid category. Produce E-LKPD products

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