

Development of electronic student worksheets on junior high school students' descriptive text writing skills assisted by liveworksheets..

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ABSTRACT

This study aims to develop an Electronic Student Worksheet to improve the ability to write descriptive texts of junior high school students assisted by Liveworksheets. This study is a development research (R&D), with a research method that applies the ADDIE model consisting of five stages, namely Analysis, Design, Development, Implementation, Evaluation. The subjects in this study were grade VII junior high school students in the city of Surakarta. Based on the results of the study, it can be seen that the form of Electronic Student Worksheet contains identity, open materials, activities or practice questions, evaluations, conclusions or feedback that are arranged regularly. The impact after using E-LKPD on the ability to write descriptive texts of junior high school students is 19.37. At an average value of the initial condition of students of 58.12 in the pre-test, an average value of 61.25 was obtained and for the post-test, a significant increase in value was obtained, namely 80.62.

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1. INTRODUCTION

Writing is an activity to express ideas, thoughts, or feelings through language symbols. Writing activities involve various aspects, such as the use of punctuation and spelling, sentence design, idea development, and the arrangement of writing formats (Parra & Calero, 2019). Meanwhile, (Sun et al., 2021; Zulaiha & Triana, 2023) states that writing is an active and productive ability. This skill is one aspect that is considered challenging because it not only produces a product, but also involves the process of developing ideas, concepts, imaginations, and opinions that are manifested through written media. Writing is not just expressing ideas in written form, but also includes the process of thinking, managing information, and conveying messages clearly and effectively (Sukma et al., 2024). Writing is one of the skills that students must have, because if they can master the other three skills, they must indirectly realize it in writing (Lesty et al., 2025). Writing activities are very diverse, one of which is writing descriptive text. According to Balansa et al. (2023) Descriptive text is a paragraph that contains an explanation or description of an object, place or other thing that is arranged according to the topic presented. The purpose of descriptive text is so that readers can understand the topic explained or depicted in detail and clearly.

Based on interviews conducted with Indonesian language teachers at junior high schools in Surakarta city for two weeks, it was found that one of the main problems in writing descriptive texts is limited understanding, many students have difficulty finding the right words to describe an object in detail. They often use words that are

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too general and not varied enough, so that the descriptions they create feel less alive and uninteresting. In addition, students also have difficulty in developing descriptive sentences, they tend to only mention facts without providing a clear picture. Another problem is the lack of understanding of the structure of descriptive texts. Some students mix the identification and description sections without a clear pattern, so that their writing becomes disorganized. In addition, they often organize ideas systematically, so that the text feels irregular and disjointed. This can be proven by the students' descriptive text writing scores which are still relatively low before using Liveworksheets-based E-LKPD. Before the introduction of Liveworksheets-assisted Electronic Student Worksheet, the average score of students in writing descriptive text was 60, which is in the sufficient category and still below the Maximum Completion Criteria (KKM) of 75.

To improve the quality of learning to write descriptive texts, interesting teaching materials are needed. Teaching materials have a very close relationship with teaching media because both complement each other. Teaching materials are all information, knowledge in a particular field of science that is specifically designed and developed based on the curriculum to be used by students to achieve learning objectives in both text and non-text forms (Maru et al., 2020). According to (Nuryasana & Desiningrum, 2020) Teaching materials are all types of materials used to support teachers in carrying out the learning process. This material can be presented in written or non-written form. The same thing was said by (Nurafni et al., 2020) Teaching materials are an important element in the teaching and learning process used by teachers to guide students in learning. The use of teaching materials helps students understand learning materials more easily based on the available information (Fadila et al., 2023).

Teaching media is an important thing that can influence the implementation of the learning process, teaching media has an important role in the implementation of the learning process, with interesting teaching media it can stimulate students well in receiving the material presented by the teacher (Sulistiani et al., 2023). Teaching media is any form that can be used to convey information from teachers to students in a planned manner so that a conducive learning environment is created where students can undergo the learning process in an efficient and effective manner (Dai et al., 2023). According to Appiah et al. (2023) Teaching media is a tool or intermediary that is useful for facilitating the teaching and learning process, in order to make communication between teachers and students more effective. The use of teaching media in the learning process can develop interest and desire to increase motivation in learning (Malahito & Quimbo, 2020). Students can learn better because learning media helps them achieve success in the learning process (Hayyu Annaafi Warida Putri & Gallant Karunia Assidik, 2024). Teaching media has several functions, namely to convey information in the learning process, encourage student learning motivation, complete and enrich information in learning activities, and add variety in the presentation of materials (Trisiana, 2020).

One of the teaching materials used to improve students' writing skills is the Electronic Student Worksheet which can be accessed quickly and easily via Laptop/PC/Mobile Phone. Data on the Electronic Student Worksheet is supported by images or videos and questions on the Electronic Student Worksheet allow students to answer questions directly without having to access an active link to Google Forms or the like (Zahroh & Yuliani, 2021). The preparation of this Electronic Student Worksheet uses the Canva application which is then connected to Liveworksheets. Liveworksheets is an application that can be accessed via Google to change worksheets to be more easily accessible quickly, attractive and fully interactive (Adrillian et al., 2024; Shobri et al., 2021).

Liveworksheets is a website that gives teachers the freedom to turn printed worksheets into more interactive online-based exercises (Sarah et al., 2022). The Liveworksheets application has several advantages such as ease of use, practicality, and various features that can increase the attractiveness of Electronic Student Worksheet (Purwaningrum & Leksono, 2022). Teachers have the flexibility to create or insert materials, learning videos, links, audio and various types of questions, including multiple choice, questionnaires, drop & down, and others. In addition, answers that have been submitted by students will be automatically sent to the teacher's account and email that have been registered previously. The student assessment process is also carried out automatically by the system, eliminating the need for teachers to make manual corrections (Daud, 2024).

Many studies have been conducted related to the development of Electronic Student Worksheet, one of which is research conducted by (Shalahuddin & Hayuhantika, 2022) The results of this study indicate that the development of contextual-based Electronic Student Worksheet with the use of Liveworksheets media on circle material for class VIII has proven to be very valid and feasible to be used as a learning medium that can be used to develop student concepts.

Similar to research conducted by (Noor Laeli Salsabila, 2023) Based on this study, Electronic Student Worksheet based on Liveworksheets on theme 7 on the development of food production technology in class III of SD 3 Nyangkowek, the material is declared valid and can be applied in learning activities.

Further research (Syafuruddin et al., 2022) The findings of this study indicate that Electronic Student Worksheet to improve systematic literacy skills has met the eligibility requirements to be used as a reference in learning and is also effective in supporting mathematical literacy skills.

Further research on the development of Electronic Student Worksheet was carried out by (Lestari, 2022) which states that the Liveworksheets web-based Electronic Student Worksheet learning media on the economic demand and supply material developed is declared valid and practical.

The research was conducted with the title Development of Electronic Student Worksheets on Junior High School Students' Descriptive Text Writing Ability Assisted by Liveworksheets. This title is specifically designed to improve junior high school students' descriptive text writing ability. Different from previous studies that tend to use print media or general learning applications, this study utilizes Liveworksheets features optimally to create a more interesting, adaptive learning experience and facilitate direct feedback in the writing learning process.

2. METHOD

This research is included in the Research and Development (R&D) type of research which aims to improve existing products to make them more effective (Sugiyono, 2022). Meanwhile, according to (Annisa et al., 2023) Development research is a type of research that is not only carried out to create a product, but also to test it with the hope that it can be applied in the world of education. The purpose of this research is to find, create, and perfect products according to the indicators that will be developed (Kristiwi Wahyuningtyas & Listiadi, 2021). In this study, the researcher also conducted semi-structured interviews to obtain more in-depth and accurate information. The interviews were conducted with the guidance of a number of questions that had been prepared in advance according to the researcher's needs. This interview activity involved 3 students as participants. This study was conducted at SMP Kota Surakarta with 32 subjects of grade VII students. The model applied in this approach is the ADDIE model which includes Analyze, Design, Development, Implementation, Evaluation (Fauziyah et al., 2023). The following are the steps of the ADDIE model.

Table 1. Steps of the ADDIE Model

Steps	Information
Analyze	The information taken is in the form of problem analysis, then conducting an analysis of student needs in learning so that the E-LKPD developed is effective.
Design	At this stage, the researcher began to develop the E-LKPD design by utilizing the Canva application according to the results of the needs analysis and the materials used.
Development	The next stage is the validation stage which is carried out by experts such as media experts and material experts.
Implementation	At this stage, researchers began to implement the E-LKPD that had been prepared and validated to find out the effectiveness of the development of the E-LKPD.
Evaluation	The final stage is the evaluation stage where researchers make considerations regarding the product through information or data obtained from the trials that have been conducted, so as to obtain the final product.

In the quantitative data analysis of product feasibility tests, researchers use a Likert scale as a reference to measure the level of agreement or assessment of respondents to the tested product. The percentage of product feasibility tests uses the following formula:

$$P \frac{f}{N} \times 100\%$$

Information:

P = Presentation

F = Frequency

N = Maximum score

The overall feasibility level of the assessment of this development media can be seen from the final average value of the validity test results given by each media expert and material expert, the pretest value and the posttest value. Research and development are considered successful if the value of descriptive text writing skills increases after the research in accordance with the KKM of junior high schools in Solo City, which is 75. The criteria for the success of descriptive text writing skills are determined based on the following value range: a score of 0-20 is considered "very lacking", 21-40 is considered "less", 41-60 is considered "sufficient", 61-80 is considered "good", and 81-100 is considered "very good".

3. RESULTS AND DISCUSSION

The ADDIE development stages applied by researchers to develop Electronic Student Worksheet using the ADDIE model consisting of the Analyze, Design, Development, Implementation, and Evaluation stages. The

following are the results and discussion of the development of Electronic Student Worksheet on the ability to write descriptive texts of junior high school students assisted by Liveworksheets by utilizing the ADDIE model:

3.1 Analyze

The first stage, namely Analyze, is an observation stage to analyze needs by consulting teachers and students to support the components that need to be in Electronic Student Worksheet, so that it can increase students' desires and motivation. The results of the interview obtained that after the teacher gave the material on the board and then continued with the Practice questions in the book, the teacher had used a touch of technology when giving assignments that could be done at home but had not introduced students to the Liveworksheets application.

The initial condition of junior high school students in Surakarta city shows that the ability of junior high school students in Surakarta city in writing descriptive texts is still relatively low, this can be seen from their lack of understanding of the material taught by the teacher. The results of the initial condition test can be seen in table 2 below.

Table 2. Initial Conditions

No	Pretest Score	Frequency	Percentage
1	0-20	4	12,5%
2	21-40	8	26,6%
3	41-60	11	34,3%
4	61-80	5	15,6%
5	81-100	4	12,5%
Amount		32	100%

Table 2 shows that the initial condition value on the ability to write descriptive text is still relatively low. The average value obtained from this initial condition value is 58.12 which is included in the less category. While the KKM of junior high schools in Surakarta City is 75. Students who get very less scores are 4 people (12.5%), the less category is 8 people (26.6%), the sufficient category is 11 people (34.3%), the good category is 5 people (15.6%) and the very good category is 4 people (12.5%).

At this initial condition stage, the category of "sufficient" dominates. Therefore, efforts are needed to improve students' grades in the ability to write descriptive texts, one of which can be done by increasing students' interest through the application of Electronic Student Worksheet assisted by Liveworksheets.

Table 3. Aspects of Initial Condition Assessment

No	Assessment Aspects	Average Score (%)
1	Text Structure	57%
2	Spelling Correctness	65%
3	Linguistic Rules	61%
4	Text Integration	54%

3.2 Design

The second stage, Design (Planning), is the stage of developing Student Worksheet that is adjusted to the curriculum applied and student needs. The design of the Student Worksheet design uses the help of the Canva application which has many interesting animations, images, and characters. The appearance of the Student Worksheet design developed by the researcher can be seen in Figure 1:

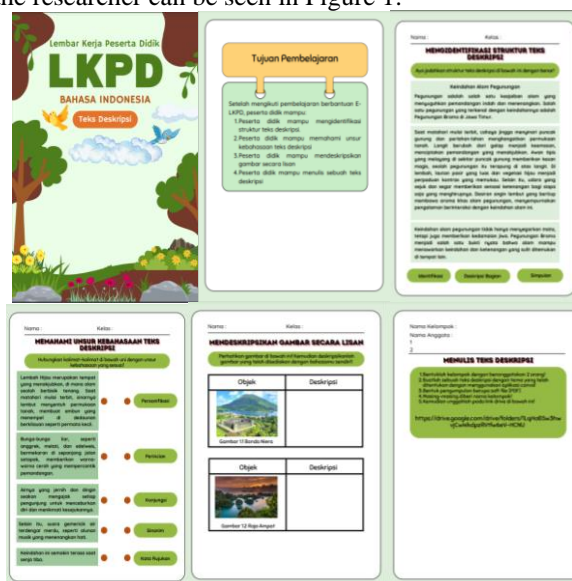


Figure 1. Student Worksheet with Canva

The Student Worksheet design is then entered into Liveworksheets to change the appearance to Electronic Student Worksheet which students can access via the following link <https://bit.ly/E-LKPD-TeksDeskripsi>. Electronic Student Worksheet assisted by Liveworksheets is arranged according to the number of meetings that have been arranged to achieve learning objectives. The appearance of Electronic Student Worksheet that has been entered into Liveworksheets can be seen in the following image:

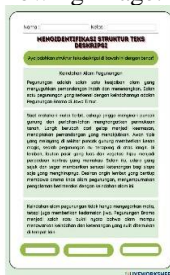


Figure 2. Electronic Student Worksheet Section in Descriptive Text Structure

The first stage students identify the structure of the descriptive text consisting of identification, description of parts and Conclusion. Then students can answer the first question by using the drag and drop feature.



Figure 3. Electronic Student Worksheet Section on Language Elements

The second stage, students determine the linguistic elements. Then students can answer by matching or connecting sentences with the right linguistic elements.



Figure 4. Electronic Student Worksheet Section Describes Images Verbally

Next, in the third stage, students can describe the picture verbally. Students must be able to produce a text by observing the picture that has been provided, then students can write the answer directly in the column provided.



Figure 5. Electronic Student Worksheet Section on Writing Descriptive Text

Then in the last stage, students can create a descriptive text with the theme "school environment" using the Canva application. Then after finishing students can upload it to the Google Drive link that has been provided.

3.3 Development

In the third stage, namely the development stage, the researcher conducted a validity test of Electronic Student Worksheet assisted by Liveworksheets by media experts and material experts. The purpose of this

validity test is to assess the feasibility of Electronic Student Worksheet in Indonesian language learning, especially in descriptive text material. The results of the validity analysis from media experts are presented in Table 4, which has been analyzed using the Likert scale formula.

Table 4. Media Expert Validation

No	Indicator	Score
1	Media attraction	4
2	Color combinations in media	4
3	Image display	4
4	Suitability of media to the environment	4
5	Completeness of material components	4
6	Suitability of media to student characteristics	4
7	Instructions for using the media	4
8	Ease of use of media	4

$$\begin{aligned}\bar{x} &= \frac{\text{Number of points obtained}}{\text{Maximum value amount}} \times 100 \\ &= \frac{32}{40} \times 100 \\ &= 80\end{aligned}$$

Media expert validation of Electronic Student Worksheet assisted by Liveworksheets was conducted by experts in the field of learning technology. Based on the validation results, this Electronic Student Worksheet obtained a total score of 32, which was calculated using the Likert scale formula, resulting in a value of 80 with the criteria of "feasible."

Table 5. Validation by Material Experts

No	Indicator	Score
1	Completeness of materials	5
2	Breadth of material	4
3	Depth of material	4
4	Accuracy of concepts and definitions	4
5	Accuracy of drawings, diagrams and illustrations	4
6	Accuracy of terms	4
7	Using contextual case examples from everyday life	4
8	Encourage curiosity	5
9	Creating the ability to ask questions	4
10	Pictures, diagrams and illustrations in everyday life	4

$$\begin{aligned}\bar{x} &= \frac{\text{Number of points obtained}}{\text{Maximum value amount}} \times 100 \\ &= \frac{42}{50} \times 100 \\ &= 84\end{aligned}$$

Validation of material experts on descriptive text learning was carried out by experts who have expertise in their fields. The validation results showed a total score of 42, which was calculated using the Likert scale formula, resulting in a value of 84 with the criteria of "very feasible."

3.4 Implementation

The fourth stage is the Implementation stage, at this stage the researcher began to apply the Electronic Student Worksheet assisted by Liveworksheets during Indonesian language learning activities, especially for descriptive text materials.

After knowing the initial condition value, a product trial can be carried out in two stages, namely the stage before and after using the Electronic Student Worksheet assisted by Liveworksheets. In the early stages, the Electronic Student Worksheet assisted by Liveworksheets had not been used.

Table 6. Pretest Values

No	Value Range	Frequency	Total Value	Percentage
1	0-20	4	80	12,5%
2	21-40	7	280	21,8%
3	41-60	10	600	31,2%
4	61-80	5	400	15,6%
5	81-100	6	600	18,7%
Amount		32	1960	100%

$$\bar{x} = \frac{\sum x}{N}$$

$$= \frac{1960}{32}$$

$$\bar{x} = 61,25$$

In table 6, the pretest scores that are categorized as "sufficient" are very dominant. 4 students obtained very poor scores (12.5%), the poor category had 7 students (21.8%), the sufficient category had 10 students (31.2%), the good category had 5 students (15.6%), and the very good category had 6 students (18.7%).

Table 7. Pretest Assessment Aspects

No	Assessment Aspects	Average Score (%)
1	Text structure	70%
2	Spelling Accuracy	63%
3	Linguistic Rules	62%
4	Text Accuracy	60%

The next stage is the posttest assessment after using the Electronic Student Worksheet assisted by Liveworksheets. At this stage, students are given questions to be tested through Liveworksheets which contain questions to create descriptive texts on the theme of "School Environment" created using the Canva application. Then the results of the students' work are collected via Google Drive. The teacher gives an assessment based on 4 criteria, namely text structure, spelling accuracy, language rules, and accuracy of the descriptive text.

Table 8. Post Test Values

No	Posttest Value	Frequency	Total Value	Percentage
1	0-20	2	40	6,25%
2	21-40	3	120	9,3%
3	41-60	1	60	3,1%
4	61-80	12	960	37,5%
5	81-100	14	1400	43,7%
Amount		32	2580	100%

In table 8 the average posttest value obtained was 80.62 involving 32 junior high school students. The average value obtained through the following formula:

$$\bar{x} = \frac{\sum x}{N}$$

$$= \frac{2580}{32}$$

$$\bar{x} = 80,62$$

In the posttest, the "very good" category was very dominant. There were 2 students (6.25%) who obtained very poor scores, 3 students (9.3%), who obtained sufficient scores, 1 student (3.1%), 12 students (37.5%) who obtained good scores, and 14 students (43.7%) who obtained very good scores.

Table 9. Post Test Assessment Aspects

No	Assessment aspects	Average Score (%)
1	Text Structure	80%
2	Spelling Accuracy	82%
3	Linguistic rules	83%
4	text accuracy	85%

Based on the results of the discussion above, it can be concluded that the use of Electronic Student Worksheets assisted by Liveworksheets can improve students' grades in learning to write descriptive texts. In line with the findings (Kurnia et al., 2025) that Electronic Student Worksheets can improve students' grades in writing. This is indicated by 26 students who successfully achieved the KKM of SMPN in Surakarta City, which was 75. There was an increase of (34.37%), which was calculated from the number of students who completed the pretest of 11 people, and increased to 26 students (81.25%) in the posttest. Thus, the difference between the percentage of completion in the posttest and pretest is (46.88%).

3.5 Evaluation

The fifth stage, namely the Evaluation stage, at this stage the researcher conducted an evaluation after using Electronic Student Worksheet assisted by Liveworksheets during Indonesian language learning activities, especially on descriptive text material.



Figure 6. Student Response Results

Based on the results obtained from 32 students, it shows that the Electronic Student Worksheet for the ability to write descriptive texts assisted by Liveworksheets obtained a high average score. This is evidenced by the results of the trial with an overall average of 80.62 so that the development of the Electronic Student Worksheet on the ability to write descriptive texts of junior high school students assisted by Liveworksheets is declared feasible and can be used for learning in class VII of junior high schools in the city of Surakarta because it received a positive response from students, here are some student responses after using the Electronic Student Worksheet on the ability to write descriptive texts of junior high school students assisted by Liveworksheets:

“At first I had a bit of difficulty because I had to understand how to work on the questions in Liveworksheets, but after getting used to it, I felt more comfortable.” (Interview, BR, November 13, 2024)

“I can access this E-LKPD anytime and anywhere via my cellphone or laptop, so I don't need to bring a lot of books.” (Interview, AKR, November 13, 2024)

“Learning with this E-LKPD is more fun than practicing in a book, there are features like drag and drop, matching answers, and entries that are immediately corrected.” (Interview, DTKS, November 13, 2024)

Student responses are classified as positive responses because students are enthusiastic in using the Electronic Student Worksheet assisted by Liveworksheets which can be easily accessed using a cellphone or laptop without having to create an account first. In addition, in using this Electronic Student Worksheet, students can re-access the material in it, because this Electronic Student Worksheet can be accessed anytime and anywhere. The Liveworksheets Electronic Student Worksheet provides many features that prevent students from getting bored quickly while studying, so that students are more active in learning in class.

This study contributes to the development of theory in the field of Indonesian language education, especially descriptive text writing skills. By combining a digital-based learning approach through Liveworksheets, this study enriches the study of the effectiveness of interactive media in improving writing skills. In addition, this study adds insight into the design of Electronic Student Worksheets that are in accordance with the characteristics of junior high school students, especially in the context of writing learning that requires visual stimuli, directed structures, and direct feedback (Jr & Pacoy, 2021; Shoval et al., 2018).

Practically, this research produces an electronic Student Worksheet product based on Liveworksheets that can be used by teachers as an interactive, interesting, and easily accessible learning media (Appiah et al., 2023; Toharudin & Kurniawan, 2023). This Electronic Student Worksheet helps junior high school students improve their ability to write descriptive texts through varied exercises and direct feedback. Teachers can use this product to enrich classroom learning methods, while students get a more enjoyable and independent learning experience. In addition, this product can also be used as a reference or model for the development of Electronic Student Worksheets in other learning.

4. CONCLUSION

Based on the results and discussions that have been presented, it can be concluded that the development of Electronic Student Worksheets on the ability to write descriptive texts of junior high school students assisted by Liveworksheets can increase students' interest in learning and make students more involved in learning. This can be proven by an increase of 19.37. The average initial condition of 58.12 on the pre-test score before using the Electronic Student Worksheet obtained an average of 61.25. At the post-test stage, there was a significant increase in the average writing of descriptive texts of 80.62.

The development of Electronic Student Worksheet on the ability to write descriptive texts has also proven effective in improving students' writing skills, especially in learning descriptive texts. Through the features offered by Liveworksheets, students can more easily understand the structure and rules of writing descriptive texts in a more interesting and less boring way. In addition, automatic feedback from the platform helps students evaluate their mistakes independently, thus encouraging the improvement and refinement of writing skills. Ease of access in its use also provides opportunities for students to learn anytime and anywhere.

Although it has several advantages, of course there are several disadvantages in the Electronic Student Worksheet assisted by Liveworksheets such as initial adaptation to the platform, limited access for students who do not have gadgets or stable internet, lack of direct interaction with teachers, and not all students have adequate technological skills, and technical errors can hinder the learning process.

This study has several limitations that need to be considered. First, the development of the Electronic Student Worksheet only focused on the material of writing descriptive texts and did not cover other types of texts in writing learning. Second, the research subjects were limited to grade VII students at junior high schools in Surakarta city, so the results cannot necessarily be generalized to all levels or school contexts. Third, the use of Liveworksheets as a digital media depends on the availability of devices and adequate internet access, which may be an obstacle in some school environments.

For future research, it is suggested that the development of learning media be expanded to other types of texts such as narrative, exposition, and argumentation in order to increase the scope of writing learning. In addition, trials need to be conducted in more schools and classes with diverse conditions to test the effectiveness of the Electronic Student Worksheet more widely.

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