



## NEED ANALYSIS OF APPLYING E-LKPD BASED ON LIVEWORKSHEET NATURAL SCIENCE LEARNING SUBJECTS AT CLASS V ELEMENTARY SCHOOL

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### ABSTRACT

One of the learning adaptation processes in the revolutionary era of 4.0 is digital and interactive-based student worksheets (LKPD). LKPDs are more innovative and can be packaged in online form or can be called Electronic Student Worksheets (E-LKPD). This paper aims to conduct a need analysis of E-LKPD based on live worksheets in science natural learning subjects at class V SD. The research was conducted at SDN 87 Palembang. Data collection uses a questionnaire with qualitative data. The data analysis technique used is descriptive analysis through data reduction, data presentation, conclusion, and verification. The data that need to be analyzed regarding the use of the teaching materials are the implementation of teaching and learning material through the evaluation system and the supporting factors. The research results of the need analysis imply that 46.9% answered that the learning method that was frequently used was discussion or question and answer. In addition, 84.4% of students answered that they had difficulty understanding natural science learning subjects in the class. A total of 78.1% of students stated that they really needed live worksheet-based E-LKPD teaching materials in the learning process in the class. Subsequently, 75% of students strongly agree that the use of the E-LKPD is equipped with interesting pictures, videos, audio, and questions. Hence, E-LKPD based on Liveworksheets can be used as an alternative electronic teaching material.

**Keywords:** need analysis, E-LKPD, live worksheet, natural science learning subjects

## ANALISIS KEBUTUHAN PENGGUNAAN E-LKPD BERBASIS LIVEWORKSHEET MATA PELAJARAN IPA DI KELAS V SD

### ABSTRAK

Proses adaptasi pembelajaran pada era revolusi 4.0 salah satunya adalah lembar kerja peserta didik (LKPD) berbasis digital dan interaktif. LKPD yang lebih inovatif dan dapat dikemas dalam bentuk *online* atau dapat disebut dengan Lembar Kerja Peserta Didik Elektronik (E-LKPD). Penelitian ini bertujuan untuk melakukan analisis kebutuhan terhadap E-LKPD berbasis *liveworksheets* pada mata pelajaran IPA di kelas V SD. Penelitian dilakukan di SDN 87 Palembang. Pengumpulan data menggunakan kuesioner dengan jenis data kualitatif. Teknik analisis data yang digunakan adalah analisis deskriptif dengan reduksi data, penyajian data, penarikan kesimpulan dan verifikasi. Data-data yang perlu dianalisis mengenai penggunaan jenis bahan ajar yang digunakan adalah melalui pelaksanaan pembelajaran, sistem evaluasi, dan faktor-faktor yang mendukungnya. Hasil penelitian analisis kebutuhan menunjukkan sejumlah 46,9% menjawab metode pembelajaran yang sering digunakan adalah diskusi atau tanya jawab. Selain itu, sejumlah 84,4% peserta didik menjawab merasa kesulitan memahami mata pelajaran IPA di kelas. Sejumlah 78,1% peserta didik menyatakan sangat membutuhkan bahan ajar E-LKPD berbasis *liveworksheet* dalam proses pembelajaran dikelas. Selanjutnya, 75% peserta didik sangat setuju jika penggunaan E-LKPD dilengkapi dengan gambar, video, audio dan soal yang menarik. Disimpulkan E-LKPD berbasis *Liveworksheets* dapat dijadikan salah satu alternatif bahan ajar elektronik.

**Kata Kunci:** analisis kebutuhan, E-LKPD, *liveworksheet*, mata pelajaran IPA

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### INTRODUCTION

Education plays an important role in creating an intelligent, broad-minded generation capable of solving problems both now and in the future. According to Zubaidah (2017) in the 21st

century, the role of the teacher shifts from the pattern of "planting knowledge" to the role of guide, guide of discussion and measure of student learning progress. The main goal of learning in

the 21st century is to build individual learning abilities and support the development of students to become lifelong learners, active and independent.

The learning process is the main key in student learning activities. In the 2013 curriculum, learning activities need to use the principles of: 1) student-centered, 2) develop student creativity, 3) create fun and challenging conditions, 4) include values, ethics, aesthetics, logic, and kinesthetic, and 5) provide diverse learning experiences through the application of various fun, contextual, effective, efficient and meaningful learning strategies and methods (Muhammad, 2017). Learning that always innovates should keep up with the times and technology is one of the considerations for educators in determining learning strategies. This is done so that students are accustomed to the role of technology in the current era of globalization (Purba, 2022).

An educator (teacher) in education has a very large role that requires teachers to have strategies and creativity in the learning process. The science learning process in the classroom must be optimally designed to achieve learning objectives. Teachers can use teaching materials to support the learning process. According to Ikhsan, et al (2016), one of the competencies that teachers need to have in carrying out their duties is to develop teaching materials as a means to prepare for the course of learning activities.

An education system that applies the concept of independent learning requires teaching materials specifically designed to be studied by students independently, therefore it requires professionals who are able to develop independent teaching materials. The development of teaching materials is important to be carried out by educators so that learning is more effective, efficient, and does not deviate from the competencies to be achieved. Therefore, teaching materials are very important to be developed in an effort to improve the quality of learning. One of the teaching materials to be developed is student worksheets (LKPD). According to Umbaryati, (2016) LKPD is a means to assist and expedite teaching and learning activities so that effective interactions will be formed between

students and educators. This is expected to increase the activity of students in learning outcomes.

Another 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 a higher level. One platform that can be used to create an E-LKPD is a Live Worksheet. This site can be accessed easily via Google and students can work on assignments online, and making it is fairly easy because a worksheet template has been provided that can be used as a reference (ED Putri & Amini, 2021).

LKPD usually contains the LKPD Title, Basic Competency, Completion of time, materials/equipment used, brief information, Work steps, tasks to be done, and reports to be done (Lathifah, et al, 2021). Therefore, student worksheets are needed that allow students to identify systematic concepts, understand what is being taught, and solve problems related to everyday life. Learning with real-life problem settings can help students learn more easily.

Students are expected to master the concepts presented and actively participate in science learning, especially light material. LKPD in printed form is not yet effective in its use and inconvenient to use. To be able to optimize the appearance and quality of learning, it is necessary to make changes based on a combination of information and communication technology (Herawati, et al, 2016). Information and telecommunications technology in question is LKPD which can be accessed on laptops or mobile phones so that students can answer direct questions available in the question answer column directly without having to work on paper and asking students to send photos containing answers.

Liveworksheet is a free website service on Google, liveworksheet is one of the application references that produces interactive teaching materials by converting printed student worksheets online by accessing [www.liveworksheet.com](http://www.liveworksheet.com). Teachers can use the LKPD on the site directly with the template provided or can also make their own (Amalia & Lestyanto, 2021). Research on the use of liveworksheet-based LKPD has been conducted

by Farman et al. (2021) wrote that the development of E LKPD using live worksheets for learning Mathematics during a pandemic was very valid and practical.

Furthermore, research conducted by Ansyah et al (2021: 288) stated that the PBL-based research worksheets for students in science subjects about environmental pollution that were developed were very feasible and received very good responses based on the results of student responses to the list of questions given.

Based on the results of interviews conducted by researchers with fifth grade educators at SDN 87 Palembang, they showed

that they had used LKPD in the form of sheets of paper in learning activities but had never made and used electronic-based LKPD (E-LKPD) so that learning activities so far looked monotonous, less interesting and innovative. Another problem is that students have difficulty understanding learning and feel easily bored in participating in learning as evidenced by the list of semester exam scores for science subjects there are still many students who have not met the minimum completeness criteria. The following is a list of semester exam scores for class V students at SDN 87 Palembang:

**Table 1. List of Semester Examination Scores**

Class	Number of Students	Score		
		<75	≥75	Lowest Highest
V	32 People	22 People (69%)	10 People (31%)	45 85

Source: List of Semester Examination Scores for Science Subject of Class V Students at SDN 87 Palembang

Based on the table above, it can be seen that the learning outcomes of 32 class V students at SDN 87 Palembang, a total of 22 (69%) students did not meet the KKM, while 10 (31%) students met the KKM. While the highest score of students is 85 and the lowest score is 45. Therefore, to minimize the deficiencies that exist in science learning in class V which results in low student learning outcomes, it is necessary to evaluate and innovate by presenting the use of LKPD teaching materials that are newest and more effective. In this case learning using the E-LKPD is a solution and is much needed in improving the science learning outcomes of fifth grade elementary school students. Based on the explanation above, the purpose of this study was to conduct a needs analysis for the use of liverworksheet-based E-LKPD for science subjects in class V SD.

## LITERATURE REVIEW

### Needs Analysis Study

Analysis is an investigation of an event in order to find out the actual situation (causes, circumstances, and so on). Thus, the effort made to investigate an event that occurs due to a discrepancy between the expected ideal conditions and the actual conditions that occur, is

simply an activity referred to as needs analysis. According to Kaufman, (1972) needs analysis is a process carried out to identify gaps that occur between the actual results obtained and the expected results.

The gap that is considered the most crucial is a priority to be immediately reviewed to find the actual conditions and needs that arise, so that the most appropriate way or solution to overcome the gaps and meet the needs that arise can be identified. Another opinion states that needs analysis is a series of activities that focus on the process. This process is carried out to make a decision on which needs are prioritized to find a solution (Sanjaya, 2008:91). Thus it can be seen that the needs analysis activity is a complex thing.

The goal to be achieved through needs analysis is not only to find the gaps that occur, but more than that, the identification of the causes of the gaps is also carried out to find out the root cause, so that actual needs can be identified. In this study, a systemic and systematic process of needs analysis was carried out to find gaps by identifying ideal conditions and actual conditions so that the goals or conditions expected previously could be realized optimally.

### **E-LKPD Teaching Materials**

Teaching materials are learning aids that have an important role and become a dynamic element in learning activities because they can support the learning process of students. Cruz Rondón & Velasco Vera (2016) revealed that teaching materials are a tool that facilitates learning that provides information by using real language exposure and using a more creative approach and adapted to the needs of students. Meanwhile, according to Pribadi (2019) teaching materials are a collection of information and knowledge that can be learned by students which if designed systematically and thoroughly are expected to increase the learner's interest in learning.

This concept agrees with Wahyuningtyas & Trisnawati (2021) who say that teaching materials are a collection of material information that is structured and plays a role in supporting the teaching and learning process. The use of technology is one of the important things in the learning process in the digitalization era, so innovation is needed in the use of electronic and digital LKPD teaching materials or commonly called E-LKPD.

Electronic worksheets are student practice sheets that are done digitally and are carried out systematically and continuously for a certain period of time (Ramlawati et al., 2014). E-LKPD can display videos, images, text and questions that can be graded automatically. Electronic LKPD can also be designed and adapted to the wishes and creativity of educators so that they can be attractive and can optimize the teaching and learning process.

### **E-LKPD based on Liveworksheet**

Learning that is carried out using interactive worksheets will make the learning atmosphere more enjoyable and not feel bored (Ryabchikova et al., 2020). One of the free online sites used to create or compile interactive worksheets is Liveworksheets. This site can be accessed at [www.liveworksheets.com](http://www.liveworksheets.com) free of charge, but users must register to obtain an account. The types of questions that can be made on this site are very diverse.

The teacher can choose the type of drop-down questions, multiple choice, check boxes, joint with arrows, drag-drop and listening-speaking (Hazlita, 2021 ). Teachers can also use questions that have been created by other users by copying the question link and sharing it with the students' WA group. Another advantage of this site is that after completing the evaluation, the system will automatically give a score on the worksheet that the students worked on. Liveworksheets is a platform in the form of a website that provides services for educators to be able to use the available E-LKPD and make their own E-LKPD interactive online.

### **Science learning**

Science learning at the elementary level plays an important role in learning science at the next level, because student experience influences interest in learning science (Khoirunnisa et al., 2020). Considering the results of interviews in the field, science learning is still not ideal because the availability of material displayed is still lacking, some students experience difficulties in understanding science lessons which have an impact on student learning outcomes so that students are not encouraged to think critically, students work less systematically because they rely on worksheets bought at school

The LKPD used is currently only available in schools that are not yet electronic based. Science learning is still considered difficult by some students (Fitri, Helma, & Syarifuddin, 2014). because it relies on LKS purchased at school, the LKPD used is currently only available in schools that are not yet electronic-based. Science learning is still considered difficult by some students (Fitri, Helma, & Syarifuddin, 2014). In general, in learning subjects that are considered difficult, students tend to show interest in learning and low achievement motivation as well (Suherman, 2015). IPA deals with material phenomena and is primarily based on observation and induction. Science becomes a way to observe nature that is analytical, complete and thorough and connects other phenomena so that the whole forms a new perspective on the object being observed.

Given the importance of science lessons, it is highly expected that the role of a teacher can determine a learning approach that can change the mindset and views of students towards science, (Saparwadi, 2016). Learning really acts as a reference for teachers and students to achieve learning competencies while keeping abreast of the times and analyzing the needs of students (Supadma et al., 2019).

### REASERCH METHOD

This research is a type of descriptive qualitative research. This research was conducted

in Class V SDN 87 Palembang in the first week of October 2022. The population in this study were all 32 Class V students. Data collection in this study used a questionnaire with qualitative data types and distributed using a Google form so that respondents could fill out the questionnaire online. With the aim of knowing the needs of students in the science learning process and knowing the conditions and problems in learning science. The data analysis technique used is descriptive analysis with data reduction, data presentation, conclusion and verification. Below is a needs analysis instrument in this study:

**Table 2. Needs Analysis Instruments**

No	Aspect	Indikator	No Angket
1	Learning Aspects	- Preferred learning - Learning methods that are often used - Preferred learning style - Media that is often used	4,5,6,8
2	Material Aspect	- The hardest material -The reason for material difficulties	7,16
3	Aspects of the need for E-LKPD Features	- Display pictures, concept maps, videos and interesting questions - Audio display	9,10,12,14 13
4	evaluation aspect	- View summary, exercises and questions	11
5	Aspects of facilities and infrastructure	- Enjoyable learning environment - Habit of using android/laptop	15,17

### RESULTS AND DISCUSSION

#### Research result

The following is the result of the needs analysis obtained by filling out the questionnaire via the Google form with a total number of respondents of 32. Respondent identity indicators

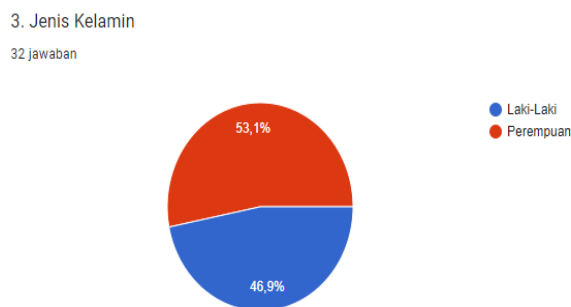
were asked at the beginning of the needs analysis to briefly determine the identity of the respondent. The following are the results of the needs analysis for the use of Liveworksheet-based E-LKPD.

1. Nama Siswa  
32 jawaban

Zaskyah Ramadhanissa Firdaus
Muhammad Eric Gustiano
Dhoolinda Jasmine
febriani nur amella
Raffi Eka Musyary
M. Sultan Daffe
arielliano syahla faiza
Faiz Firos Farid

**Figure 1. Name of Respondent**

The data above are the names of respondents or class V students at SDN 87 Palembang with a total of 32 people.



**Figure 2. Gender of Respondents.**

Based on the results of this analysis, it was found that 53.1% of the respondents were male, while the other 46.9% were female.



**Figure 3. The method used by the teacher**

Based on the results of the diagram above, it is known that according to students the

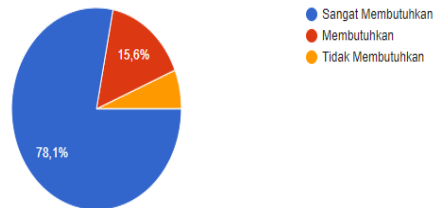
method often used by teachers with 46.9% answering the discussion/question and answer

method, 21.9% in the form of giving assignments, 18.8% in the form of solving problems, and

12.5% answering The method is in the form of lectures or teacher explanations only.

9. Apakah anda merasa membutuhkan bahan ajar berupa E-LKPD yang dilengkapi dengan gambar, peta konsep dan materi yang menarik ?

32 jawaban



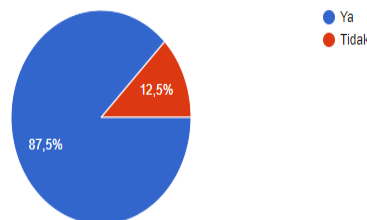
**Figure 4. The need for E-LKPD**

Based on the results of this analysis, it was found that 78.1% answered that they really needed a tool in the form of E-LKPD teaching materials and 15.6% answered that they needed it, while 6.3% answered that they did not need it.

Because students state that they really need E-LKPD in the learning process so researchers need to do an analysis of students' abilities to use mobile phones because later teaching materials will be online.

15. Apakah kalian sudah terbiasa menggunakan handphone / android?

32 jawaban

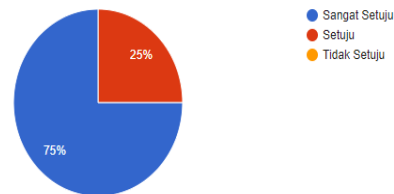


**Figure 5. Mobile Usage**

The data above shows that 87.5% of students are used to using cellphones or Android in their daily lives. While 12.5% answered that they were still not used to using cellphones. Based on these data, it can be interpreted that students in

class V at SDN 87 Palembang are already familiar with using cellphones and laptops so that it will make it easier for students to operate E-LKPD based on liveworksheets.

12. Apakah anda setuju jika lembar kerja berisi gambar, video, musik, dan soal yang menarik ?  
 32 jawaban

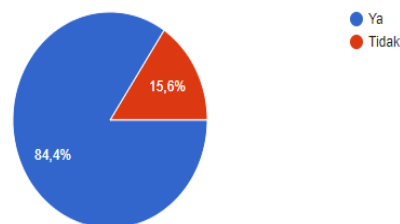


**Figure 6. E-LKPD features**

Based on the results of the diagram above, it is known that 75% of students strongly agree if the E-LKPD is equipped with interesting

pictures, videos, audio and questions. While 25% of students agreed.

16. Apakah anda merasa kesulitan dalam memahami pelajaran IPA?  
 32 jawaban



**Figure 7. Analysis of Science Material Difficulties**

Based on the results of this analysis, it was found that 84.4% of students answered that they had difficulty understanding science subjects in class, and 15.6% of students stated that they had no difficulty understanding science material. Given that a solution is needed to make science material easy for students to understand, an interesting and interactive teaching material is needed while taking into account technological advances and the effectiveness of the learning process by using electronic or digital based LKPD.

### Discussion

Electronic Student Worksheets (E-LKPD) are internet-assisted learning tools (student worksheets) that are arranged systematically in certain learning units presented in electronic format (Kholifahtus et al., 2021: 146). Electronic LKPD can display videos, images, text and

questions that can be graded automatically. Electronic LKPD can also be designed and adapted to the wishes and creativity of educators so that they can be attractive and can optimize the online teaching and learning process. E-LKPD has the advantage of saving paper as a material used to print LKPD.

Based on a literature study, E-LKPD makes learning fun and can improve cognitive learning outcomes. E-LKPD can visualize difficult concepts so they are easy to understand and can be used independently anywhere and anytime. As for teachers, LKPD can assist teachers in overcoming low student learning outcomes in the concept of natural science material to make it interesting.

Based on the needs analysis test via the Google Form questionnaire by student respondents it shows that the use of the E-LKPD is very much needed for fifth grade students at



SDN 87 Palembang especially in science subjects. Abstract material and limited teaching materials used in learning make students less understanding of learning material. So that it is necessary to visualize abstract material by using E-LKPD.

This is in line with the opinion of Fahmi & Rusmianto (2016) which states that the presentation of teaching materials is not only limited to print media, but has made use of digital media. Innovation in developing a teaching material in learning activities. One of the teaching materials that can be transformed in its presentation into electronic form is LKPD so that it can visualize material that is considered abstract to become more concrete.

Making E-LKPD later adapts to the features needed by students. Teachers can load materials, learning videos, links, audio and various types of questions such as multiple choice questions, short entries, drop & down, and others. In addition, student worksheet answers will be sent to the teacher's account and email that was previously registered, then the student's grades will be automatically processed by the system.

In line with Nurhidayati's opinion (2019:2) E-LKPD is a learning tool that contains material and exercises in digital form and is carried out systematically and continuously for a specified period of time and can be designed by including video, audio and interactive images. This provides an advantage for the teacher, where the teacher does not need to manually correct the answers from students.

## CONCLUSIONS AND RECOMMENDATION

Based on the results of the research above, it can be concluded that 78.1% of students stated that they really needed E-LKPD teaching materials in the science learning process in class V SDN 87 Palembang. E-LKPD that is in accordance with this needs analysis can be an alternative media that can be used by teachers in carrying out interesting and interactive learning activities so that it has an impact on improving student learning outcomes. Based on the conclusions above, the suggestions given by the author are.

The results of the Liveworksheet-based E-LKPD needs analysis are a variety of teaching

materials or learning media that can be used in class. However, adjustments need to be made to the conditions and characteristics of each class. Liveworksheet-based E-LKPD development can also be developed for other subjects so that students are more active and motivated in learning. This is also related to supporting applications in making E-LKPD because currently there are so many other supporting applications that teachers can use to make E-LKPD.

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