



## The Need for the Development of PjBL-Based Social Studies E-LKPD for Elementary School Students

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### ABSTRAK

Kemampuan berpikir kritis siswa Sekolah Dasar (SD) masih perlu diperhatikan kembali, khususnya dalam pembelajaran Ilmu Pengetahuan Sosial (IPS). Salah satu cara untuk meningkatkan kemampuan berpikir kritis dengan menggunakan bahan ajar berupa Lembar Kerja Peserta Didik Elektronik (E-LKPD) IPS. Penelitian ini bertujuan untuk menganalisis kebutuhan dalam mengembangkan E-LKPD IPS berbasis proyek (PjBL), produk yang dikembangkan diharapkan mampu untuk meningkatkan kemampuan berpikir kritis siswa SD. Penelitian dilakukan di Sekolah Dasar yang berkawasan di Jakarta Timur dengan subjek penelitian 34 siswa. Penelitian ini menggunakan jenis penelitian pengembangan model ADDIE. Namun, dalam penelitian ini peneliti hanya melakukan tahap analisis untuk mengetahui analisis kebutuhan siswa dan guru agar mengembangkan produk E-LKPD IPS sesuai dengan kebutuhan lapangan. Teknik pengumpulan data yang digunakan adalah wawancara dan pengisian angket dengan teknik analisis deksriptif. Data dianalisis menggunakan teknik analisis deskriptif untuk menganalisis proses pembelajaran IPS dan analisis karakteristik siswa. Hasil analisis menunjukkan bahan ajar berupa LKPD yang dikembangkan oleh guru masih memiliki beberapa kekurangan. Maka dari itu, sekolah sangat membutuhkan E-LKPD yang benar untuk pembelajaran, khususnya E-LKPD IPS berbasis PjBL sesuai dengan Kurikulum Merdeka. Informasi terbaru pada penelitian ini berimplikasi sebagai bahan rujukan atau informasi analisis bagi penelitian selanjutnya dalam mengembangkan produk E-LKPD IPS berbasis PjBL. Dengan demikian, produk yang dikembangkan sesuai dengan kebutuhan lapangan serta dapat menjadi alternatif solusi permasalahan yang ada.

### ABSTRACT

The critical thinking skills of elementary school students still need to be re-considered, especially in learning Social Sciences (IPS). One way to improve critical thinking skills is by using teaching materials in the form of Electronic Student Worksheets (E-LKPD) for Social Studies. This study aims to analyze the needs in developing project-based (PjBL) IPS E-LKPD, the products developed are expected to be able to improve the critical thinking skills of elementary school students. The study was conducted in an elementary school in East Jakarta with 34 students as research subjects. This study uses the ADDIE model development research type. However, in this study the researcher only conducted the analysis stage to determine the analysis of student and teacher needs so that the development of the IPS E-LKPD product is in accordance with field needs. The data collection techniques used were interviews and filling out questionnaires with descriptive analysis techniques. The data were analyzed using descriptive analysis techniques to analyze the social learning process and analyze student characteristics. The results of the analysis showed that the teaching materials in the form of LKPD developed by teachers still had several shortcomings. Therefore, schools really need the right E-LKPD for learning, especially PjBL-based IPS E-LKPD in accordance with the Merdeka Curriculum. The latest information in this study has implications as reference material or analysis information for further research in developing PjBL-based IPS E-LKPD products. Thus, the products developed are in accordance with field needs and can be an alternative solution to existing problems.

## 1. INTRODUCTION

The development of 21<sup>st</sup> century learning directs teachers to be able to change the traditional learning process that is centered on teachers into a pattern that can be centered on students to make learning in the classroom interesting. Student-centered learning will make the classroom atmosphere rich in activities, fun, and can improve student learning outcomes to have a motivation to follow learning (Rai et al., 2017; Ahmadiyahanto, 2016). One way to make learning centered on students is to develop teaching materials such as Student Worksheets (LKPD) using innovative learning models. LKPD is printed teaching material in the form of sheets of paper containing a summary of the material and instructions that must be completed by students (Sutrisno, 2021; Asmaranti et al., 2018). The use of LKPD in learning provides many benefits. Several previous studies have stated that LKPD in learning can improve learning outcomes (Mursalim & Rumbarak, 2021; Agustina et al., 2019; Khairunnisa et al., 2019). LKPD can also improve problem solving skills (Amirin & Suparman, 2019; Nurrohmadadita, 2018). LKPD worked on by students can increase their independence (Angraeni et al., 2020; Khairunnisa et al., 2019). Other research also reveals that the use of LKPD can also improve students' critical thinking skills (Nurrohmadadita, 2018).

Critical thinking skills are one of the skills needed in 21<sup>st</sup> century learning. Several previous studies also argue that critical thinking skills are highly valued in today's era because educational practices emphasize basic skills such as reading, writing, and arithmetic, without considering equipping students with the skills to face today's challenges (Dixon, 2017 in (Purwaningsih & Wangid, 2021). Critical thinking ability is the ability that individuals have to act rationally in determining and choosing the best alternative choices (Firdaus et al., 2019; Juhji & Suardi, 2018). Every student needs to have critical thinking skills to make it easier to solve problems and get used to facing challenges. Seeing the importance of critical thinking skills, critical thinking skills should be trained from an early age. In the scope of elementary school (SD), critical thinking skills can be trained through several existing learning. One of them is through Social Sciences (IPS) learning. The results of elementary school IPS learning also refer to 2 abilities, namely the ability to understand IPS concepts and the ability to apply IPS understanding such as critical and creative thinking skills, problem solving skills, and decision-making skills (Saharuddin & Mutiani, 2020; Ulfa & Munastiwi, 2021). To achieve the objectives of social studies learning in elementary schools, social studies learning needs to be taught as interestingly as possible.

However, in practice, critical thinking skills in elementary school still need to be improved, especially the critical thinking skills of 5th grade students at Rabbaniyyun Islamic School Elementary School. Based on the results of observations, researchers found a problem that students were still unable to further analyze a problem or phenomenon in elementary school social studies learning. Students' analytical skills can be seen from students' answers in the evaluation in the form of descriptions with the HOTS model. When given questions with HOTS questions, students still have difficulty in understanding the intent and purpose of the questions, so students need to be given further direction and guidance by the teacher to understand the intent of the questions. Moreover, 5th grade students are faced with the Minimum Competency Assessment (AKM) program, so students' critical thinking skills must be trained in order to be able to understand each question.

Seeing these problems, researchers aim to develop LKPD as an alternative solution to the problems above. The LKPD developed is oriented towards project-based learning (PjBL). PjBL is a learning model that is centered on students and provides meaningful experiences for them (Rasidah et al., 2022; Afriana in Lailatunnahar, 2021). By using learning models, students have direct learning experiences through project creation. PjBL can improve students' ability to solve problems (Dewi et al., 2017; Wahyu, 2016). Problem solving skills are a student's ability to solve problems by thinking logically, critically and systematically. The implementation of this research is also based on previous research. Several previous research results state that LKPD has been proven to improve students' critical thinking skills (Nurhayati et al., 2022; Wulandari et al., 2022). The results of other studies also state that project-based learning can improve critical thinking skills (Sari, 2023; Herlina et al., 2022). Based on the results of previous research, researchers tried to provide a new color by developing electronic LKPD which was developed in the form of an application. Researchers use Unity software in developing LKPD so that the results are in the form of applications. The use of Unity software can make the developed application displayed on mobile phones and computers. This is done by researchers as an effort for students to take part in technological progress. The use of technology is very important in supporting education (Damayanti & Nuzuli, 2023; Pare & Sihotang, 2023). In addition, the use of digital teaching materials that utilize the use of technology can also encourage student independence. Learning using technology can train student independence (Rahmawati et al., 2021; Sari et al., 2021).

The urgency of this research is the importance of improving students' critical thinking skills through the provision of E-LKPD. Based on the results of previous research and the results of observations that have been described, the researcher decided to find alternative solutions by developing PjBL-based E-

LKPD. This study aims to analyze the needs in developing project-based IPS E-LKPD (PjBL). The product innovation developed is expected to be able to improve the critical thinking skills of elementary school students. In addition to providing innovation in social studies learning, PjBL-based E-LKPD is expected to be able to improve the critical thinking skills of elementary school students.

## 2. METHOD

This research uses the Research and Development (RnD) type of research with the ADDIE model which has 5 stages, namely analysis, design, development, implementation and evaluation (Sugiyono, 2015). The stages in this research can be presented in Figure 1.

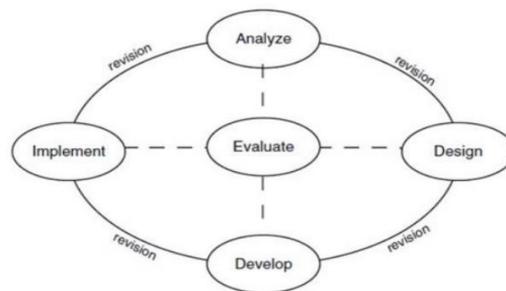


Figure 1. ADDIE Research Model

In the analysis stage, information is searched by conducting a needs analysis of teachers and students. In the design stage, the product design to be developed and the product design to be made into a finished product are prepared. In the development stage, product validation is carried out by experts to determine the level of feasibility of the product being developed. In the implementation stage, product trials are carried out on students by teaching in class using the product that has been developed. Finally, in the evaluation stage, an evaluation is carried out to measure the effectiveness of the product that has been developed in improving students' critical thinking skills. This RnD research was conducted at a public elementary school in East Jakarta with 34 students as research subjects.

The purpose of this study is to find out more clearly about the needs analysis in developing PjBL-based IPS E-LKPD products which are expected to improve the critical thinking skills of elementary school students. Judging from the purpose of the study, the research process is only focused on the analysis section. In the analysis stage, researchers conducted a needs analysis of teachers and students to obtain detailed information about problems in the learning process, especially in elementary school IPS lessons. Data collection techniques in finding information about teacher and student needs analysis were carried out by interview, namely descriptive analysis. The collected data will be analyzed using descriptive analysis techniques to analyze the social studies learning process and analysis of student characteristics. The interview instrument for analyzing teacher and student needs can be presented in Table 1 and Table 2.

Table 1. The Teacher Needs Analysis Interview Instrument

No.	Aspect	Question Indicator	Item number
1.	Learning	What methods and approaches are used during science lessons?	1
		During the learning process, how is the student's learning motivation when the usual methods and approaches are used?	2
		In science lessons, what material is difficult for students to understand?	3
		In this difficult material, what obstacles do students experience?	4
		What teaching materials have been used during the teaching and learning process?	5
		While using these teaching materials, were there any shortcomings that you felt when using these teaching materials?	6

No.	Aspect	Question Indicator	Item number
		Is it necessary to have additional supporting teaching materials to overcome difficulties in science lessons?	7
		What types of teaching materials are needed in learning to overcome students' problems in science lessons?	8
		What is the content of teaching materials expected by the teacher?	9
		Do all students have student books?	10
		Do all students have electronic devices?	11
		Teachers' expectations regarding teaching materials to be developed by researchers	12
2.	Student characteristics	What are the cognitive characteristics of students?	13
		What are the students' learning styles?	14
<b>Total Questions</b>			<b>14</b>

**Table 2.**The Student Needs Analysis Interview Instrument

No.	Aspect	Question Indicator	Item number
1.	Learning	What teaching materials are used in class when learning science?	1
		Are the teaching materials used in science learning interesting to you?	2
		What is the physical condition of the teaching materials used in science learning?	3
		Are there instructions for using teaching materials in science learning?	4
		Is it necessary to have accompanying teaching materials in learning science?	7
		The attractiveness of electronic LKPD based on PjBL when used during social studies learning	8
		How do teachers teach in class during science learning?	5
		Is there any material in science learning that is difficult to understand?	6
		Do you have any electronic devices for studying?	9
<b>Total questions</b>			<b>9</b>

### 3. RESULT AND DISCUSSION

#### Result

The results and discussion of this study reflect the ADDIE research steps which include 5 stages, namely analysis, design, development, implementation, and evaluation. However, due to time constraints in this study, the researcher only carried out this research stage as far as needs analysis in the analysis stage. The results of the needs analysis cover 2 aspects of analysis, namely the analysis of the social studies learning process and the analysis of the characteristics of 5th grade elementary school students. Overall, the results and discussion of the research conducted by the researcher in the form of interviews and questionnaires can be described as follows.

#### 1. Analysis of the Learning Process

The interview results showed that the elementary school uses two curricula, namely the 2013 Curriculum and the Independent Curriculum. In the 2023/2024 school year, grades 1, 2, 4, and 5 use the Independent Curriculum and the remaining grades use the 2013 Curriculum. The implementation of social studies learning in the independent curriculum is combined with science learning called IPAS lessons. For IPAS lessons in grade 5, they are included in phase C which has 216 lesson hours/year which are divided into intracurricular activities and Pancasila student profile strengthening projects. The elements in IPAS lessons consist of 2 things, namely understanding IPAS and process skills.

Each learning achievement will be given a learning objective contained in the learning objective flow scheme. The learning objective flow is made by each class teacher themselves, adjusting to the needs in the field. To achieve learning objectives, adequate teaching materials are needed. During the learning period in grade 5, the teaching materials used by teachers are in the form of LKPD and student textbooks.

In addition, teachers also use other teaching materials in the form of bupena books containing practice questions. However, this bupena book is only owned by the teacher. The learning media used by teachers are in the form of images and videos contained in PPT format. In terms of learning devices, teachers have tried to create learning devices independently which consist of making teaching materials, LKPD, and learning media.

The creation of learning devices is adjusted to the needs of students and the characteristics of students in each class. For the creation of LKPD itself, teachers still use the LKPD form which only contains practice questions as a form of student self-evaluation of cognitive abilities. The application of LKPD in learning is carried out by teachers only under certain conditions. This is because the practice questions in the student's book are considered sufficient to develop students' cognitive abilities, so that students more often answer practice questions from books than work on LKPD made by teachers. LKPD is intended as a student's independent evaluation, although sometimes in working on it the teacher asks students to work in groups. That way, students' collaboration and cooperation skills can be developed properly.

The social studies learning process that takes place in grade 5 is carried out in accordance with the learning objectives that are made by the scheme using the learning objective flow made by the teaching teacher. Before carrying out the learning, the teacher creates a teaching module as an initial learning guideline. The teaching module contains learning achievements, learning indicators, learning objectives, learning models, learning methods, teaching resources, learning media, learning steps, evaluations, and assessment rubrics. Specifically in social studies lessons, class teachers more often use the lecture method with a cooperative learning model with learning media in the form of PPT. The social studies learning material that is difficult for students to understand is electricity because students still do not understand how electric current flows in series and parallel circuits. This is evident when giving formative practice questions, many students are still wrong in answering the questions. In addition, students still need to develop critical thinking skills.

Students' thinking ability that is still not optimal is seen when they answer essay questions that must provide further explanation. When given the question "why" students are still unable to provide a detailed explanation of something or the question "how". To provide reasons for the questions "agree" and "disagree" students are also not able to provide further reasons. They only provide answers agreeing or disagreeing with a statement without giving a reason. The science lessons taught by teachers are also still not linked to science and social studies materials so that the two lessons stand alone. Thus, in semester 1 they only study science material and semester 2 only study social studies material.

The teaching materials used by teachers are in the form of student books, bupena books, and LKPD. The LKPD used is still in the form of sheets that are printed out independently by the teacher, so that often the students' LKPD is not stored properly. Instructions for using LKPD are always explained verbally by the teacher, so that if there is a step that is missed by the student, the student will continue to ask the teacher concerned. Seeing the development of the world of education, education should be linked to technology so that the quality of education continues to improve. To meet educational needs, the teaching materials made by teachers can be in electronic form so that student independence can be trained. Students at SD Rabbaniyun Islamic School themselves have been facilitated with personal gadgets to support the learning process, so that learning with a school technology utilization system can be realized. The enthusiasm of students in using electronic teaching materials is also very good because it is something new in the learning atmosphere in the classroom.

## ***2. Analysis of Elementary School Student Characteristics***

Grade 5 students have an age range of 10 to 11 years. At that age, students enter the concrete operational phase. In accordance with this development, there are several developmental implications in learning. These implications include: (1) using concrete objects in learning; (2) using visual tools such as pictures or videos in learning; (3) using real and close examples in students' daily lives; (4) students are trained to solve problems, trained to carry out activities independently and responsibly; and (5) getting students used to speaking in public.

The 5th grade students at the elementary school have a kinesthetic learning style. Kinesthetic learning style is a learning style that involves physical movement. They prefer practical activities in learning. The use of games in learning can also increase student activity in learning. So far, the learning method that is often used by teachers is the lecture method with teacher participation being more dominant than student participation. The varied cooperative learning model that is often applied by teachers can be an alternative solution to the problem of students' kinesthetic learning styles. This is done to avoid boredom in learning.

Project-based learning (PjBL) models are still rarely used by teachers in learning. The PjBL model is considered a learning model that is difficult for teachers to apply because it must produce a concrete

product. Therefore, the PjBL model is usually used in certain lessons and materials. In fact, in its application, the intended product can be a change in social attitudes or student character. By applying the PjBL learning model, students will experience direct interaction with the environment to understand the learning material.

## Discussion

Based on the results of interviews with teachers and students, it was found that teachers have utilized LKPD as one of the supporting learning materials. However, LKPD developed by teachers still has several shortcomings. The first shortcoming, in terms of the substance of the science lessons, the LKPD given is still in the form of an evaluation that only focuses on students' cognitive abilities. Several previous studies have explained the problems in science lessons, especially in social studies learning that social studies learning only focuses on students' memorization abilities (Hapsari & Prasetyaningtyas, 2023; Watik et al., 2023). LKPD should contain interesting learning activities, so that students can directly experience learning through direct practice.

The second drawback, in terms of the appearance of the LKPD itself, is still only in the form of separate sheets. That way, the LKPD will be more easily lost if students do not store it properly. The third drawback, students' critical thinking skills still need to be improved. Based on the results of interviews with teachers, it was found that students were still not optimal in developing an answer. This is in line with previous research which found the problem that students' ability to develop an answer was still not optimal and students had difficulty providing answers (Kadir et al., 2022; Wahono et al., 2022). Every student must have critical thinking skills so that students have good skills in solving a problem (Hasanah, 2023).

Seeing the appearance of LKPD which still needs improvement, the researcher made an alternative solution by developing LKPD in electronic form or better known as E-LKPD. By developing E-LKPD, it is hoped that students can improve their learning outcomes and critical thinking skills. In addition, the development of teaching materials in electronic form has advantages such as (1) training student independence (Putri et al., 2022; Astuti et al., 2021); (2) can be accessed anywhere and anytime without being hindered by space and time (Putri et al., 2022; Nida et al., 2021); (3) equipped with interactive features to support teaching materials (Latri, 2023; Permatasari et al., 2022); and (4) practical and effective in learning (Jazuli et al., 2017).

Improving students' critical thinking skills can also be trained by implementing E-LKPD. Several previous studies have stated that improving critical thinking skills can be done through the use of E-LKPD (Rohma et al., 2023; Sumanik, 2022). Critical thinking skills can help students in making conclusions (Firdaus et al., 2019; Trimahesri & Hardini, 2019). The E-LKPD that will be developed will use PjBL steps, namely students will carry out various mental and physical activities.

The use of PjBL steps is expected to be an appropriate learning model to accommodate students' learning styles dominated by kinesthetic learning styles. Providing physical activity in PjBL learning is expected to make it easier for students to absorb teaching materials. Through this project-based learning, of course, students are directed to produce a project in learning. This project is what needs to be linked to the child's environment. This makes learning remembered for a long time and stored in long-term memory (Nirmayani & Dewi, 2021; Potvin et al., 2021).

The latest information in this study has implications as a reference or information for needs analysis for further researchers in developing PjBL-based IPS E-LKPD products. Thus, the products developed are in accordance with field needs and can be an alternative solution to existing problems. The limitation of this study is that it has not completed all stages of ADDIE. The stages carried out by the researcher only focus on the analysis stage because the researcher wants to dig up in-depth information about the problems in the school. Based on the limitations of this study, further research is needed to develop PjBL-based IPS E-LKPD products into finished products that can be used as supporting teaching materials for learning that have gone through product feasibility and effectiveness tests.

## 4. CONCLUSION

Based on the research results, teaching materials in the form of LKPD developed by teachers still have several shortcomings. This was revealed in the needs analysis interview. Therefore, schools really need the right LKPD for learning, especially PjBL-based E-LKPD in accordance with the independent curriculum. The latest information in this study can be a reference for further research in developing PjBL-based E-LKPD that is in accordance with the correct LKPD criteria in it.

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