

DEVELOPMENT OF E-LKPD BASED ON PROBLEM BASED LEARNING ON SERVICE ENTERPRISE ACCOUNTING FOR CLASS X AKL IN SMK

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ABSTRACT

This research and development is motivated by because the LKPD teaching materials used to support accounting learning activities for service enterprise accounting at SMKN 1 Surabaya do not attract students' interest in learning, are not based on problem based learning, and do not utilize electronic media such as smartphones or laptops. The use of interesting and creative teaching materials by utilizing technology can help understand the material and reduce boredom in learning. This study aims to develop E-LKPD based on problem-based learning, analyze the feasibility of E-LKPD based on problem-based learning, and analyze students' responses of using E-LKPD based on problem based and learning on service enterprise accounting for class X AKL at SMKN 1 Surabaya. Researchers used the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) research model developed by Branch. The results of this study are E-LKPD based on problem-based learning obtained an assessment from material experts reaching 90% with the category "very feasible", an assessment from media experts reaching 95% with the category "very feasible", an assessment from linguists reaching 99% with the category "very feasible", and student responses after using teaching materials reaching 97% with the criteria "very understanding". Therefore, E-LKPD is effectively used in the learning process.

Keywords: *E-lkpd, problem-based learning, service enterprise accounting*

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INTRODUCTION

The rapid development of Science and Technology (Science and Technology) has a lot of influence on life today. Science and Technology (IPTEK) has been very rapid in various fields, one of which is in the world of education (Mulyani et al., 2021). Advances in Science and Technology (IPTEK) have a greater impact on certain aspects of education (Putri & Susilowibowo, 2023). Education has an important role in the era of society 5.0. Nastiti & Abdu (2020) explained that society 5.0 is defined as the concept of a human-centered social order assisted by

technology. In the era of society 5.0, character education and role modeling receive greater attention in the learning process. Education in Indonesia must be of higher quality to meet the demands of the society 5.0 era to produce superior and competitive graduates.

Over time, the current challenges are not only the demands of the era of society 5.0, but also the conditions of the Covid-19 pandemic which have paralyzed almost all sectors of the world, including the Indonesian education system. Therefore, the government officially implemented a new curriculum, namely the independent curriculum. The independent curriculum cannot be separated from technology and information, so students must have digital literacy skills, knowledge skills, and technology mastery (Sakdiah & Maryam Jamilah, 2022). According to Shafi et al. (2020) this curriculum reform focuses on character building and forming superior competence. The strategy to support learning through a curriculum that is tailored to the needs because the curriculum is the heart of the academic center that is able to realize the goals of the education system (Shafi et al., 2020).

Teachers must be able to produce teaching materials as interesting as possible and utilize digital technology in the learning process. The use of interesting and creative teaching materials can use technology as a form of developing learning tools in the learning process. Teaching materials are important in the learning process because it is easier for teachers to provide material to students and make it easier for students to understand the material (Hasanah Dewi Lestari, 2023). Teaching materials are useful for guiding educators and students to achieve learning objectives and can be used as an alternative.

Based on the results of researchers' observations at SMKN 1 Surabaya, it can be seen that students in class X Accounting and Finance Institutions have implemented an independent curriculum. The learning model used by the teacher is the problem-based learning model. The learning methods used are lecture, question and answer, discussion, and assignment methods. The learning media used are PowerPoint, practice working on the board and worksheets. The teaching materials used are LKS from school. During learning activities, teachers allow students to use laptops and smartphones as media and learning resources.

The utilization of technology at SMKN 1 Surabaya has not been done optimally to improve electronic teaching materials. This can be shown by the existence of teaching materials that are still verbal and do not provide visual LKPD in the form of videos. In addition, students are also lazy to bring books or worksheets because they are considered heavy. Another obstacle is that students have difficulty understanding the stages of the service company accounting cycle up to the financial statement stage. In fact, when the teacher gives the opportunity to ask, only a few students actively ask. Thus, it can be seen that there are problems in students' problem-solving skills. This results in difficulties for students to understand material that involves real-life problems, causing students' critical thinking skills to be low. This is also evidenced by the learning outcomes of students in service company accounting material who still score below the Minimum Completion

Criteria (KKM = 78). Students who scored less than the KKM totaled 24 students with a percentage of 64.9% while students who scored above the KKM totaled 13 students with a percentage of 35.1%. From the state of the data it can be seen that many students have scores less than the KKM.

Based on these shortcomings, researchers are interested in developing E-LKPD based on *Problem Based Learning (PBL)* assisted by google sites on service company accounting material. Making electronic LKPD by utilizing google sites is one way of applying technology in learning. Google site is an online feature provided by Google to create a website containing information and can be shared according to user needs (Rosita & Hardini, 2022). The advantage of the google site is that it can make it easier for students to be able to learn independently. Google site was developed because the content and tools are interesting and flexible in the sense that they are flexible, fast, and easily adapted to the devices used by students in accessing the google site. E-LKPD based on Problem Based Learning (PBL) assisted by google sites is presented in the form of a website that can be accessed by laptops or computers and smartphones. E-LKPD based on *Problem Based Learning (PBL)* contains Learning Outcomes, Learning Objectives, Flow of Learning Objectives, Initial Assessment (Cognitive and Non-Cognitive), Material, Videos, Practice Questions, Reflection, and Evaluation.

As support, researchers found several studies related to the development of E-LKPD assisted by google sites into learning teaching materials. Research conducted by Munawaroh & Sholikhah (2022) on the development of PBL-based LKPD through interactive videos assisted by google sites states that it is feasible to use and test to students and teaching materials are effective and interesting to use during the learning process. Research by Rosita & Hardini (2022) with the title "Development of Tangible Fixed Asset Material Learning Website by utilizing google sites" concluded that the learning website for tangible fixed asset material by utilizing google sites was declared very feasible both from the material aspect and the media aspect and the student response included a very good category. This study aims to analyze the development of E-LKPD, analyze the feasibility and analyze the response of students after using teaching materials for learning activities based on *Problem Based Learning (PBL)* in class X AKL service company accounting material at SMK.

RESEARCH METHOD

This type of research is Research and Development (R&D). According to (Sugiyono, 2021), the research and development method aims to produce certain products and will test the effectiveness of these products. While the development model in this study uses the theory developed by Robert Maribe Branch with the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). In addition, the research design is Quasi Experimental with Nonequivalent Control Group Design. It aims to test the effectiveness of using E-LKPD based on Problem Based Learning (PBL).

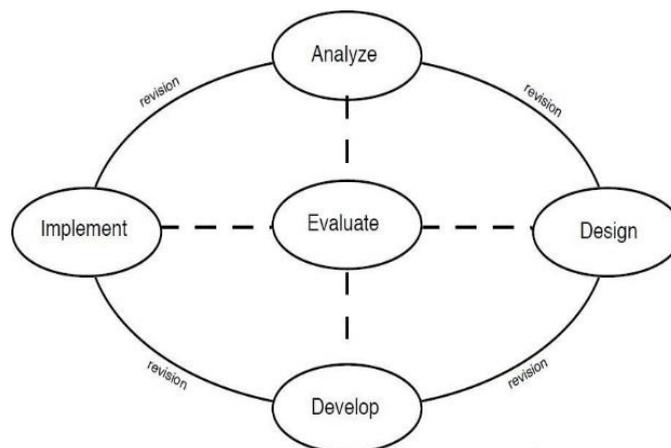


Figure 1.
The Stages of The ADDIE Model

Students of class X Financial Accounting and Institutions (AKL) 1 SMKN 1 Surabaya, totaling 36 people, were the subjects in this study. The instrument used in this development research is a questionnaire. Questionnaire or questionnaire is a method of collecting data data by giving a set of questions or written statements to respondents to answer (Sugiyono, 2021). The instruments in this study were used to evaluate the LKPD in the form of validation instruments from material experts, linguist validation, media expert validation, and students. The validation sheet was used to measure the validity of the E-LKPD developed before the limited trial was conducted. The data analysis technique used is to analyze the results of quantitative data obtained from the validation results of material experts, linguist experts, and media experts. The Likert scale used in this study consisted of.

Table 1.

Likert Scale Criterion	
Criteria	Score
Very worth it	5
Worthy	4
Decent Enough	5
Not feasible	2
Very Unworthy	1

Source: Riduwan (2013)

The validation results will be calculated using the following formula.

$$\text{Percentage (\%)} = \frac{\text{Total Score}}{\text{Maximum Total Score}} \times 100$$

The analysis results will be obtained with the following criteria.

Table 2.

Interpretation of Expert Validation Score with Likert Scale

Criteria	Percentage
Very worth it	81% - 100%
Worthy	61% - 80%
Pretty decent	41%-60%
Not feasible	21% - 40%
Very unworthy	0% - 20%

Source: Riduwan (2013)

The results of student responses were analyzed using a Guttman Scale. This aims to get answer to problems. The Guttman Scale calculation table is as follows.

Table 3.

Guttman Scale Criteria

Criteria	Score
Yes	1
No	0

The results of the student questionnaire scores will be calculated using the following formula.

$$\text{Percentage (\%)} = \frac{\text{Total Score}}{\text{Maximum Total Score}} \times 100$$

The analysis results will be obtained with the following criteria.

Table 4.

Analysis Result Category

Criteria	Percentage
Very understand	81% - 80%
Understand	61% - 80%
Pretty understand	41%-60%
Not understand	21% - 40%
Not understand very well	0% - 20%

Source: Riduwan (2013)

RESULTS AND DISCUSSION

Using the following formula to calculate the total percentage of validation results of the validators with student responses to E-LKPD based on Problem Based Learning (PBL).

Analysis

The results of the analysis at SMKN 1 Surabaya show that the learning media are PowerPoint, practice working on the blackboard and worksheets. The learning model used by the teacher is the Problem Based Learning model. The learning methods used are lecture, question and answer, discussion, and assignment

methods. The learning media used are PowerPoint, practice working on the board and worksheets. The teaching materials used are LKS from school. During learning activities, teachers allow students to use laptops and smartphones as media and learning resources. Technology utilization has not been done optimally to improve electronic teaching materials. This can be shown by the existence of teaching materials that are still verbal and do not provide visual LKPD in the form of videos. In addition, students are also lazy to carry books or worksheets because they are considered heavy. Therefore, it is necessary to update teaching materials that are packaged electronically so that they can stimulate critical thinking skills such as adding elements of images, audio, video, animation, so that students are not boring and can motivate students to learn.

The development of Problem Based Learning based E-LKPD on service enterprise accounting material can solve the details of the problem. It is expected that the development of E-LKPD will help teachers explain the material and allow students to learn easily. After identifying the problem, researchers analyzed the needs of students. The curriculum analysis needed is a curriculum that gives freedom to educators and students to do what they need during the learning process.

Design

At this stage, the researcher utilizes several software to develop E-LKPD, namely google sites which are then accessed using the website. Furthermore, Microsoft Word is needed to compile the E-LKPD material which will then be saved to the google site. E-LKPD based on Problem Based Learning on service enterprise accounting material in the form of a website that can be accessed via laptop, android and IOS smartphones. Students easily understand this learning media because it has text, images, and videos. E-LKPD based on Problem Based Learning (PBL) contains Learning Outcomes, Learning Objectives, Learning Objective Flow, Initial Assessment (Cognitive and Non-Cognitive), Material, Video, Practice Questions, Reflection, and Evaluation. Learners have the ability to directly answer the exercise questions that have been provided, and scores are given directly after they complete the exercise. Preliminary design of E-LKPD with Google site.

1. Design E-LKPD with google site.

a) Home

Contains eight main menus, namely elements, initial assessment, E-LKPD material, video, practice questions, reflection, evaluation, and developer profile.



Figure 2.
Main Menu Google Site

b) Elemen

Contains competency outcomes that contain elements, learning outcomes and learning objectives.



Figure 3.
Elemen

c) Initial assessment

Contains non-cognitive diagnostic assessments and cognitive diagnostic.

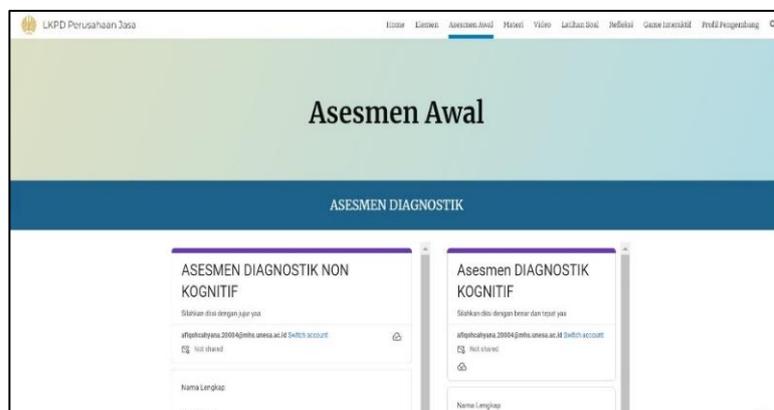


Figure 4.
Initial Assessment

d) E-LKPD Content

E-LKPD material contains cover, preface, instructions for use, table of contents, elements, concept map, material, bibliography, and glossary.



Figure 5.
Content E-LKPD

e) Video

Contains a video tutorial of the accounting cycle of service companies sourced from youtube.



Figure 6.
Video

Development

Teaching materials that have been designed will then go through the development stage or the preparation of E-LKPD. The product is developed with the help of google site and wordwall. The development of E-LKPD based on Problem Based Learning (PBL) was validated by material experts, linguists, and media experts. Validator assessment of the criteria set by the researcher.

The results of validation are reviewed from various aspects, such as.

Table 5.

Recapitulation Validation

No	Variable	Percentage	Criteria
1	Material expert	90%	Very worth it
2	Media expert	95%	Very worth it
3	Language expert	99%	Very worth it

Source: Data Processed by researcher (2024)

Implementation

In class X Financial and Institutional Accounting (AKL) 1 at SMKN 1 Surabaya, the E-LKPD is based on Problem Based Learning (PBL). In class X AKL at SMK, service enterprise accounting material is the subject of the trial. After the pilot test, students filled in the answer sheet about the development of Problem Based Learning (PBL) based E-LKPD for service enterprise accounting. The results are as follows.

Table 6.

Recapitulation of Learner Response Results

No	Variable	Total Score		Percentage	Criteria
		1	0		
1.	Content quality	104	4	96,3%	Very understand
2.	Presentation quality	176	4	97,6%	Very understand
3.	Language quality	106	2	98%	Very understand
4.	Graphic quality	141	4	97,7%	Very understand
Eligibility				97,4%	Very understand

Source: Data Processed by Researchers (2024)

The table above shows a score of 104 obtained from the assessment of the content quality aspect, the presentation quality gets a score of 176, the linguistic quality gets a score of 106, and the quality of the graphics gets a score of 141 and the total score is 526. The percentage result of the score is 97.4% and falls into the "very understanding" criteria. The sentence structure in textbooks should explain the content of the message to be conveyed, the information should be relevant and not contain double meanings (Hasruddin et al., 2014).

The Effectiveness of E-LKPD on Problem-Based Learning on Accounting Material for Service Companies Class X AKL at SMK

The effectiveness test was conducted to assess the effectiveness of using problem-based learning-based E-LKPD in the learning process. Researchers used pretest and posttest data on experimental and control classes as a comparison. Researches compared the results before treatment and after treatment. The control class received treatment without using E-LKPD based on problem-based learning,

namely using printed teaching materials, while the experimental class used E-LKPD based on problem-based learning.

The Wilcoxon test was conducted to determine the difference between the experimental class that used E-LKPD based on problem-based learning and the control class. In the experimental class there was no decrease in value and there was an increase in value from pretest to posttest. In the control class, there was an increase in value and no decrease in value from pretest to posttest. While the results of the Wilcoxon test, the Asymp.sig (2-tailed) value of the experimental class is 0.000 which indicates that the hypothesis is accepted. While the results of the Man Whitney test, found the Asymp.sig (2-tailed) value is $0.000 < 0.05$, which means it shows that the hypothesis is accepted.

The results showed that the experimental class or class that used E-LKPD based on problem-based learning had better posttest scores than the control class or class that did not use E-LKPD based on problem-based learning. So, it can be concluded that the use of E-LKPD based on problem-based learning is effective in learning accounting for service companies in class X. This agrees with (Agustina & Cahyono, 2023) research which states that android-based E-LKPD can improve student learning outcomes in cognitive, psychomotor and affective aspects, as evidenced by the difference in posttest results where the experimental class is greater than the control class. The following is the average value of the control class and experimental class in class X AKL students at SMKN 1 Surabaya.

Table 7.

Recapitulation of Student Grades

	Activity	
	Control Class	Experimental Class
Pretest	71,05	74,02
Posttest	76,5	90,77

Source: Data Processed by Researchers (2024)

Based on the results of the average pre-test and post-test in the control class and experimental class, the results showed that the experimental class or class that used E-LKPD based on problem-based learning had better posttest scores than the control class or class that did not use E-LKPD based on problem-based learning. So it can be concluded that the use of E-LKPD based on problem-based learning is effective in learning accounting for service companies in class X. The product textbooks that are organized according to objectives and needs can make it easier for students to understand learning materials (Ricky Ardiansah & Zulfiani, 2023).

Evaluation

The evaluation will assess whether or not the developed product is in accordance with the expected specifications. The evaluation stage aims to provide feedback and make revisions to the product if needed.

CONCLUSION

Based on the discussion above, the researcher draws the conclusion that (1) E-LKPD based on Problem Based Learning (PBL) for service enterprise accounting in class X Financial Accounting and Institutions (AKL) includes material related to the independent curriculum. (2) In class X SMK, E-LKPD based on Problem Based Learning (PBL) for service enterprise accounting material is rated "very feasible". This means that it can be used outside and inside the classroom. This learning teaching material helps make it easier for students to service enterprise accounting material. This Problem Based Learning (PBL) based E-LKPD has been validated through an assessment conducted by two material experts, one media expert, and one media expert. This assessment covers various aspects. (3) Students responded to the E-LKPD with the category "very understanding". (4) The learning outcomes of the experimental class or the class that uses E-LKPD based on problem-based learning and the control class that does not use E-LKPD based on problem-based learning are different.

Based on the analysis of research data and the conclusions obtained, then the following suggestions related to development can be put forward: (1) For teachers, it is hoped that the E-LKPD teaching materials that have been developed can be implemented in the learning process in the class while for students it is hoped that it can be used as an alternative independent teaching material to broaden their horizons; (2) For further research, can develop E-LKPD based on problem-based learning on other accounting materials. The E-LKPD that researches have developed still has many shortcomings and limitations in its creation and can still be maximized to make it more interesting.

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