

Development of Problem Based Student Worksheets to Improve the Critical Thinking Ability Students of Class XI IPS

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Abstract: *This study aims to produce problem-based worksheets and to see the feasibility of economic worksheets. The type of research used is Research and Development (R&D) Borg and Gall. Limited trials in this study were students of class XI IPS 4 at SMA Negeri 1 Seputih Surabaya consisting of individual tests totaling 3 students with high, medium, and low abilities. Small group trials totaling 9 students with low, medium, and high abilities. Data collection techniques using interviews, observation, and questionnaires. Based on the results of the limited trial, the overall average score was 3.4 with a percentage of 86. The results of the study obtained, 1) problem-based economic LKPD. 2) The results of the feasibility test of problem-based economic LKPD in improving critical thinking skills. 75 categories of media experts are feasible, 77 material experts are eligible categories, 76 linguists are in the proper category. LKPD based on problems in improving critical thinking skills obtained n-gain 0.88 with high criteria. That the critical thinking skills of students who use problem-based LKPD are included in the improvement with high criteria. This shows that the use of problem-based LKPD can improve students critical thinking skills.*

Key Words: *Student Worksheets, Problem Based Learning, Critical Thinking Ability*

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I. Introduction

Quality teaching materials will make it easier for teachers to deliver subject matter and students will more easily achieve learning objectives. Teaching materials developed must pay attention to the procedures for developing teaching materials in order to produce quality teaching materials.

A teacher, if in the learning process only relies on books from publishers without consciously making their own teaching materials, it automatically makes learning less attractive in class. Lack of time management by teachers, dense tasks at school, and educational qualifications can be the cause of the inadequate development of teaching materials itself so that in general teachers only use the makeshift teaching materials provided by the school.

The teaching materials used turned out to have many shortcomings, including the lack of learning material related to students daily lives and if students were given problems in real-world contexts related to their learning materials they were less able to solve them problems so that the learning process becomes less active.

Learning with problem solving is able to develop critical thinking skills independently. Learning to think is the basis for building knowledge, attitudes, and motor skills in achieving complete competence, in accordance with certain subjects and expertise.

Higher order thinking skills include remembering (C1), understanding (C2), and applying (C3), whereas higher order thinking skills include analyzing (C4), assessing (C5), and creating (C6). To achieve higher order thinking skills, students must be accustomed to solving problems that require thinking to analyze, assess, and create.

II. Literature Review

1.1 Student Worksheets (LKPD)

Student worksheets (LKPD) are a learning resource that can be developed by educators as facilitators in learning activities. Student worksheets that are compiled can be designed and developed in accordance with the conditions and situations of learning activities to be faced (Widjajanti, 2008: 1). Student Worksheet is a student guide that is used to carry out investigative activities or problem solving. So it can be concluded that Student Worksheets are sheets containing tasks that must be done by students. LKPD has very many benefits for

students, because it must be arranged properly. Student worksheets can be in the form of guides for cognitive aspect development exercises as well as guides for the development of all aspects of learning in the form of experimental and demonstration guides (Trianto, 2005: 222).

1.2 Problem Based Learning

Problem based learning is one of the innovative learning that provides active learning conditions for students in real-world conditions. Problem-based learning will produce three learning outcomes. First, inquiry and problem solving skills. Second, as a learning model for an adult approach. Third, namely independent learning skills (Yamin, 2013: 62). Current learning uses the principle of student-centered learning, which means student-centered learning. To achieve learning objectives, students actively interact with their friends to solve problems so that students mathematical abilities will increase (Herman, 2007).

1.3 Critical Thinking Ability

Critical thinking skill is the priority in the goals of education. In this case, the critical thinking has the higher process, such as analyzing, synthesizing, evaluating, drawing conclusion and reflecting which enables the individual to make the reasonable assessment both in the classroom and in the daily life (Utami, 2017). Critical thinking is the activity of analyzing an idea or idea in a more specific direction, differentiating it sharply, selecting, identifying, studying and developing it in a more perfect direction (Wijaya, 2010). The purpose of critical thinking is to test an opinion or idea, including making considerations or thoughts based on the opinion proposed. These considerations are usually supported by justifiable criteria (Sapriya, 2011: 87)

III. Research Methodology

The type of research to be carried out is research and development or R&D (Research & Development) Borg and Gall. Borg and Gall steps (in Pargito, 2009: 50) the research and development stage consists of 10 steps. The steps that must be taken in this research and development are as follows: 1) Research and Information Collecting; 2) Planning; 3) Develop Preliminary form of product; 4) Preliminary Field and Testing; 5) Main Product Revision; 6) Main Field Testing; 7) Operational Product Revision; 8) Operational Field Testing; 9) Final Product Revision; 10) Dissemination and Implementation. In this research, the research and development steps are limited to only step 5, namely product revision. The product validation expert test consists of linguists, material experts, and media experts. While the individual test sample test was 3 students of class XI IPS. Furthermore, the small group test the test sample was 9 students from class XI IPS. The research subjects in this development were 9 class XI IPS 4 students of SMA Negeri 1 Seputih Surabaya.

IV. Result and Discussions

1.4 Description Data of Research and Development

This development research was carried out through five stages out of ten stages of Borg and Gall development research (in Pargito, 2009: 50) with the following steps: 1) Research and Information Gathering; 2) Planning; 3) Initial Product Development; 4) Preliminary Trial; 5) Main Product Revision.

This research begins with research and information gathering which begins with a preliminary study to analyze the needs of students and teachers. The results of the preliminary study conducted interviews with teachers of economics subjects and this observation concluded that the printed teaching materials used were still oriented to books from publishers in collaboration with schools.

The second step of this research is planning which consists of choosing basic competencies, formulating indicators and learning objectives, determining learning strategies, and developing assessment instruments based on critical thinking skills (HOTS).

The initial product developed was in the form of problem-based economic LKPD based on problem-based learning steps. To determine the feasibility of the product being developed, a product validation test was carried out by a team of linguists, material experts, and media experts. The product practitioner test was carried out by an economics subject teacher and the limited trial consisted of 9 students with low, medium, and high abilities.

Before testing on a large-scale, problem-based economic LKPD, the researcher conducted a feasibility test which obtained the results of the assessment through a team of experts validation questionnaire. Based on expert tests that have been determined by researchers to determine the quality of the LKPD that has been developed. The LKPD validation assessment was carried out by three experts, namely media experts, material experts, and linguists. The evaluation of the problem-based LKPD validation from media experts was 169 with a percentage of 75 in the feasible category. There are still some shortcomings, namely the presentation of the cover must be adjusted to the level of learning. The LKPD validation score of the material experts was 167 with a percentage of 77, categorized as feasible. This is because there are still deficiencies in the LKPD and need to be revised, namely emphasizing the substance of the material, and the questions and presentation of problems in

each LKPD must be HOTS-based. The validation value of the linguist gets a score of 61 with a percentage of 76, categorized as feasible. This shows that there are still deficiencies in the LKPD and a revision must be made, namely the use of standard language (EYD), the writing format of the LKPD must be adjusted and consistent. The results of the practitioner's test got a score of 336 with a percentage of 78 in the feasible category and the results of limited trials of 9 students with low, medium, and high abilities got a score of 929 with a percentage of 86 which was categorized as very feasible.

Table 1. Recapitulation of Test Results for Media Experts, Material Experts, and Linguists

Expert Team	Score obtained	Percentage	Criteria
Media Expert	169	75	Worthy
Material Expert	167	77	Worthy
Linguist	61	76	Worthy

Source: Processing data research, 2020

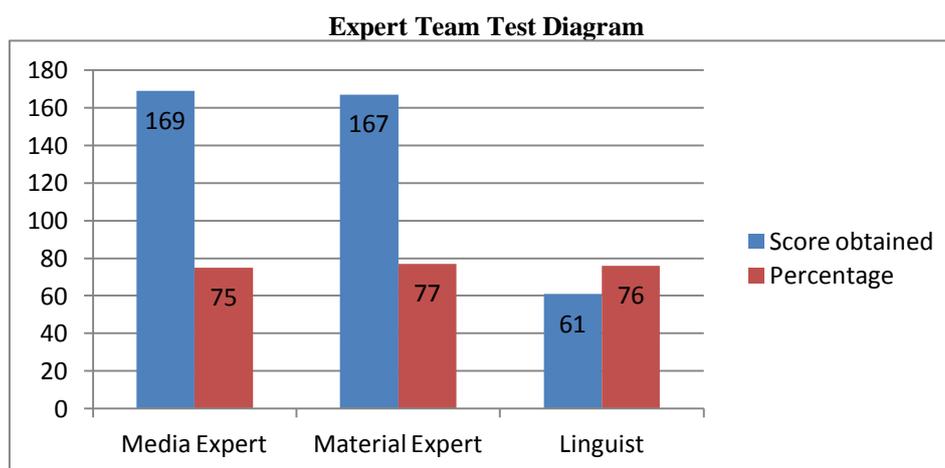


Figure 1. Eligibility Results of the Expert Team

The results of the practitioner test with the economics subject teacher got a score of 336 with a percentage of 78, categorized as feasible. While the limited trial involved nine (9) students with different ability levels. The assessment will involve high (three), medium (three) and low (three) ability students towards the LKPD. The results of the limited trial of the LKPD product assessment obtained an average score of 929 so that the percentage obtained was 86 in the very feasible category and on a scale of four.

1.5 Increasing Students' Critical Thinking Ability

The critical thinking ability of students has increased, which in the initial stage or pretest 0.44% is included in the very low criteria, After learning was done by being given treatment using problem-based LKPD, now the high criterion was 0.33%. This shows that learning using problem-based LKPD can improve students critical thinking skills.

Gain index analysis is carried out to see how critical thinking skills are increased. The data used for the gain test are pretest and posttest data on critical thinking skills. After calculating the gain index from the pretest and posttest data, the data is presented in Table 2 as follows:

Table 2. Analysis of the Pretest and Posttest Gain Index for Students' Critical Thinking Ability

Respondents	Pretest	Posttest	N-Gain	Classification
9 Student	492	765	0,88	High

Source: Processing data research, 2020

Based on table 2 above, it shows that the average critical thinking ability index gain is 0.88 with high criteria. This means that the increase in critical thinking skills of students who use problem-based LKPD is included in the improvement with high criteria, in other words the use of problem-based LKPD can improve students' critical thinking skills.

Student worksheets are a learning resource that can be developed by educators as facilitators in learning activities (Widjajanti, 2008: 1). Problem-based learning is one of the innovative learning that provides active learning conditions for students in real-world conditions. Problem-based learning will produce three learning outcomes. First, inquiry and problem solving skills. Second, as a learning model for an adult approach. The third is independent learning skills (Yamin, 2013: 62). The ability to think critically is a basic asset that

must be owned by every human being. Every human being has the potential to grow and develop into a critical thinker because actually thinking activities have a relationship with self-management patterns that exist in humans themselves (Liliasari, 2001: 55).

That accounting competence has a positive effect on students critical thinking skills. This implies that the higher the accounting competence, the more critical thinking skills of students will be increased. This implies that improving students thinking skills can be done by increasing accounting competence (Pujiati, 2013).

Based on the results of the above calculations, it shows that the average critical thinking ability index gain is 0.88 with high criteria. This means that the increase in critical thinking skills of students who use problem-based LKPD is included in the increase with high criteria, in other words, the use of problem-based LKPD can improve students critical thinking skills.

V. Conclusion

Based on the analysis of the results of research and hypothesis testing conducted, obtained the following results:

1. The process of developing problem-based economic LKPD uses the Borg and Gall Research and Development model through five development steps, namely: 1) research and information gathering, 2) planning, 3) initial product development, 4) preliminary trials, 5) main product revision .
2. Problem-based economic LKPD get results that are worth using. The feasibility test on the LKPD product was tested by three validation experts consisting of, 75 media experts in the eligible category, 77 material experts in the eligible category, 76 of linguists are in the decent category. Problem-based economic LKPD in improving critical thinking skills obtained n-gain 0.88 with high criteria. This shows that the use of problem-based economic LKPD can improve students critical thinking skills.

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