

Development of Learning Tools for Case Method-Based Cake Decoration Courses in Improving Students' Critical Thinking Skills

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ABSTRACT: This study aims to determine the process and application of cake decorating learning tools in improving students' critical thinking skills. The results of the study indicate that the Inner Case Method-based learning device has met the validity criteria. Based on the results obtained in the field, there is an increase in the percentage of each data in the field from the simulation stage then an increase is made at the trial stage. Based on the data analysis, the learning device developed meets the criteria with a validity value of 3.86 which means it is valid without revision, a practical value of 3.32 which means a high level of practicality, and can increase the average critical thinking ability test score by 74%.

Keywords: Learning courses , Case Method, Critical Thinking

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INTRODUCTION

The quality of education is closely related to the quality of graduates, because students are the center point of the learning process. Improving the quality of education, of course, will continue to take place for the sake of a desired achievement. To support these improvements, education requires the presence of an educator who can improve the quality of students. An effective learning process is learning that is able to make students active in the learning process, and in the learning process students are expected to be able to develop their knowledge through guidance from lecturers so that in the learning process, it is hoped that the lecturer will be a facilitator or as a guide.

It is hoped that the Cake Decoration course will be more effective in improving life skills and exploring ethical values, furthermore, it can develop students' interest in learning and improving skills in accordance with the main objectives of the Cake Decoration course. With the Merdeka Belajar Kampus Merdeka (MBKM) Curriculum, it is hoped that it can also develop a learning experience that provides broad opportunities for students to master the competencies needed for future life. The Merdeka Belajar Kampus Merdeka (MBKM) curriculum was prepared with the intention, among others, to grow students' potential into the ability to think critically in solving social problems. The Merdeka Belajar Kampus Merdeka (MBKM) curriculum, which contains the Cake Decoration course, can make students grow critical thinking skills. The ability to think critically is very important so it needs to be studied further to see how it plays a role in the Cake Decoration course.

For students, it is possible to train critical thinking since young, of course, by considering the stage of development, this can be done by preparing an educational curriculum based on critical thinking. As for the theoretical view of the ability to think critically, according to Johnson (Ruskandi., & Ferdian, 2015) Critical thinking is a directed and clear process used in mental activities such as solving problems, making decisions, analyzing assumptions, and conducting scientific research. Then Silvester Mas (2012), stated that there are three aspects of critical thinking that need to be developed in learning activities, namely: (1) the ability to understand problem definitions and clarification, (2) the ability to assess and process information, and (3) the ability to solve problems. problem / draw conclusions. To develop three aspects of critical thinking it is necessary, to understand about the criteria or characteristics of critical thinking.

Characteristics of critical thinking according to Ennis (Ruskandi., & Ferdian, 2015), there are 12 indicators of critical thinking skills that are grouped into 5 activities, providing simple explanations (focusing questions, analyzing questions and asking questions, and answering questions about an explanation or statement); (2) Building basic skills (considering whether the source is

reliable or not, and considering an observation report); (3) Concluding (deducing or considering the results of deductions, inducing or considering the results of inductions, and making and determining the results of considerations); (4) Provide further explanation (identify terms, definitions and dimensions, and identify assumptions); (5) Set strategies and techniques (determine actions and interact with others). From the description of the experts above, the ability to think is very important to improve.

These of learning media in the delivery of learning materials aimed at encouraging students and friends in the group to learn to think critically by analyzing cases of examples in the form of images, photos, or cases that contain problems then solving the problems contained in the examples of images presented, and then asked to discuss the results of the discussion. As for the current learning conditions in relation to critical thinking, then (1) students are able to providing simple explanations (focusing the question, analyzing the question and asking, and answering questions about an explanation or statement); (2) students are able to build basic skills (consider whether the source can be trusted or not, and consider a report on the results of observations); (3) students are able to suction concluded (deduce or consider the results of deductions, induce or consider the results of inductions, and make and determine the results of considerations); (4) student able to provide further explanation (identify terms, definitions and dimensions, and identify assumptions); (5) students are able to tour strategies and techniques (determine actions and interact with others).

Based on observations during the current semester, students who experience learning demotivation are accommodated. Demotivation shows the term to the state of (Dornyei, Z., & Ushida, 2011) states that demotivation is a number of negative influences that can derail growing motivation. A demotivated student is someone who has been motivated but then loses his commitment or interest due to several reasons (Dornyei, Z., & Ushida, 2011).

The phenomenon, which is further stated as an active case, should be overcome by the case-solving method as well as the use of the Case Method model in case and problem-solving-based learning. The case method is one of the learning models that can accommodate learning outcomes and can address the phenomena of learning demotivation, especially the decorating cake course, which requires interactive, collaborative and communicative methods. Thus the use of the case Method model by promoting the Principles of Student Center Learning (SCL) by seeking to present content By presenting content in a narrative format accompanied by questions and activities that encourage group discussion and solving complex problems, case studies facilitate the development of a higher level of Bloom Bloom's cognitive taxonomy of learning; moving beyond

the memory of knowledge to analysis, evaluation, and application (Mahdi et al., 2020) especially in the Tata Boga Education Study Program is not adequate, besides that the learning methods used are also still conventional and tend to be boring. Therefore, there is a need for innovation from lecturers to improve students' speech proficiency, starting with applying a case-based learning model that is implemented into a case-solving-based learning model. The case method-based Semester Learning Design (RPS) has important points in the preparation of project base learning-based online learning designs, including paying attention to the Learning Outcomes of Study Program Graduates, so that learning is designed in accordance with Graduate Learning Outcomes and answering the needs of the industrial world, among others by paying attention to the Independent Learning Campus Learning (MBKM) for the competence of the study program.

The critical thinking skills that have not been appropriate include: (1) students who have not yet built basic skills such as taking a stand in analyzing what sources are reliable or not, and analyzing a report on the results of observations; (2) The student has not concluded the results of the deduction and induction of an opinion and has not analyzed the results of his opinion; (3) The student has not provided further explanation using terms, definitions and dimensions, as well as using assumptions; (4) Students have not yet discussed strategies and ways in determining actions and interacting with other people.

If these weaknesses are not corrected, then what is the hope of education will never be realized in improving the quality of education. There needs to be an improvement in the learning process carried out in the Merdeka Belajar Kampus Merdeka (MBKM) curriculum, namely by making students able to develop their critical thinking skills in the learning process. If students are able to develop their critical thinking skills in the learning process, then the potential in them will also develop and also the learning process will be more effective.

For this reason, the use of good learning tools will also affect the formation of students' critical thinking skills so that the learning process of cake decoration is more effective. The effective learning tool taught to form students' critical thinking skills is to develop a Cake Decoration learning tool with a case method approach.

The shortcomings of the Case Method approach that have been applied so far are: lecturers have not been able to find extreme cases and that are good or quality, lecturers are still lacking in providing opportunities for students to analyze cases because they use the lecture method more. Therefore, researchers offer a development of learning tools with the case method, so that with the learning tool the model is expected to be able to improve students' critical

thinking skills and can improve the ability of lecturers to use the model in the learning process.

Based on the background description of the problem above, the purpose of this study is to find out the process of implementing the Case Method-based Cake Decoration course learning tools in order to improve the critical thinking skills of students of the Tata Boga Education Study Program.

THEORETICAL REVIEW

Learning Model

The Cake Decoration course is a skill course that must be mastered by students. This course aims to develop the skills and creativity of students. Therefore, it is necessary to have learning tools that support the achievement of learning outcomes. It starts with analyzing needs, increasing motivation with various interactive and communicative methods and by stimulating the ability to reason the taxonomy of thinking initiated by Bloom, namely 1) knowing, 2) understanding, 3) applying, 4) analyzing, 5) evaluating, and 6) creating / creating. So, in Higher Education based on the Independent Learning Independent Campus Curriculum (MBKM) by accommodating levels 4-6 (analyzing to creating) known as Higher Order Thinking Skills (HOTS).

The learning model that is recommended to be used in the Merdeka Belajar Kampus Merdeka (MBKM) curriculum is a student-oriented learning model (student centered) one of which is the Project Based Learning learning model and case method. In general, it can be said that the case method is formed in problem- or case-based learning, which in its application is very relevant in supporting Student Centre Learning by designing and designing previous cases, and it is considered that the case method learning model is very influential in developing problem-solving-based skills.

The case method teaching method is a highly adaptable teaching style that involves problem-based learning and promotes the development of analytical skills. By presenting content in a narrative format accompanied by questions and activities that encourage group discussion and problem solving of complex problems, case studies facilitate the development of a higher level of Bloom's cognitive taxonomy in learning; moving beyond the memory of knowledge to analysis, evaluation, and application (Nkhoma et al., 2017).

Takagi (2001) notes that case methods are practiced in the following sequence: case self-study before class, small group discussions before or during class, and large discussions within the class group discussions with the entire class. It is explained that the student is required to review the case in order to identify the problem and to research additional knowledge the preparatory work

is carried out independently and in the student's study group and it provides the basis for a thorough discussion of key issues relevant to the problem posed in the case (Mahdi et al., 2020)

Understanding Critical Thinking Ability

According to (Duron, 2006) critical thinking is, very simply stated, the ability to analyze and evaluate information. Critical thinkers raise vital questions and problems, formulate them clearly, gather and assess relevant information, use abstract ideas, think open-mindedly, and communicate effectively with others. The opinion explains about the concept of critical thinking is the ability to analyze and evaluate information. critical thinkers ask important questions and problems, formulate clearly, collect and assess relevant information, use abstract ideas, be open-minded, and communicate effectively with others.

According to (Sanjaya, 2006), thinking is basically a mental process of a person that is more than just remembering and understanding. Therefore, the ability to think requires the ability to remember and understand. Basically, the critical thinking ability that is part of thinking is high-level thinking skills that require one to think systematically, organized, directed, and clear that allows students to formulate questions and evaluate evidence, use logic, solve problems, make decisions, analyze assumptions, and conduct scientific research, as well as collect various information and then make a conclusion from the various information. Diverse definitions put forward by experts relating to critical thinking skills.

According to Sitorus (2013), critical thinking is a systematic process that allows students to formulate and evaluate their own beliefs and opinions. Johnson (Sitorus, 2013), critical thinking is an organized process that allows students to evaluate evidence, assumptions, logic, and the language that underlies the statements of others. Then in another opinion (Ruskandi, & Ferdian, 2015), also added that critical thinking is a directed and clear process that is used in mental activities such as solving problems, making decisions, analyzing assumptions, and conducting scientific research. According to Hayati (2016), Critical thinking is needed in analyzing, synthesizing, and evaluating the information on which arguments are based to make decisions. By using critical thinking skills learners can observe from various opinions of others that may be different or may also be the same. This can be done by using the ability to think critically clearly, and to never hesitate in decision making. Then, based on Bloom's revised taxonomy, create skills are the highest level of cognitive thinking. At this stage the student is required so that he is able to combine several elements into a form of unity.

From the taxonomy of learning according to Bloom at the cognitive stage, it can be seen that the skill of Creating (*create*) is the highest stage of

cognitive thinking, so from the taxonomy of learning according to Bloom at the cognitive stage it can be concluded that the ability to think critically is the ability to think that has a high level. The appearance of critical thinking is high-level thinking skills that require one to think systematically, organized, directed, and clear that allows students to formulate questions and evaluate evidence, use logic, solve problems, make decisions, analyze assumptions, and conduct scientific research, as well as collect various information and then make a conclusion from the various information. In critical thinking students, a critical thinker does not just passively receive information from others.

The syntax for critical thinking skills indicators which are grouped into 5 activities described above can be presented in the following table 1.

Table 1. Syntax indicators of critical thinking.

No.	Activity	Indicator
1.	Giving Explanation Simple	Focusing the question.
		Analyze arguments.
		Ask and answer questions
2.	Build	Consider whether the source can be trusted or not.
		Observing and considering observation reports.
3.	Basic Skills Conclude	Deduce and consider the results of the deduction.
		Induce and consider the results of induction.
		Make and determine the results of considerations.
4.		Defines terms and considers a define contents
		Identify assumptions
5.	Provide further explanation	Define an action
		Interact with other people

(Source: Winarsih, et al. 2014)

The characteristics of critical thinking ability are: (1) Providing simple explanations (focusing questions, analyzing arguments and asking questions, and answering questions about an explanation or statement); (2) Building basic skills (considering whether the source is reliable or not, and considering reports of observations); (3) Concluding (deducing or considering the results of deductions, inducing or considering the results of inductions, and making and determining the results of considerations); (4) Provide further explanation

(identify terms, definitions and dimensions, and identify assumptions); (5) Set strategies and techniques (determine actions and interact with others).

METHODOLOGY

The research was carried out at the Tata Boga Education Study Program, Medan State University, in the Cake Decoration course, where students must have full competence in terms of decorating the kua so that there is conformity with research. As the population in this study was taken from students of the Tata Boga Education study program totaling 29 students.

The development research method aims to produce a superior product that is preceded by preliminary research before the product is developed. The purpose of development research is to formulate or test theories but is to develop products that are effectively used in learning. Menurut Borg & Gall (2003), that research and development is an industry-based development model where the findings of research results are used to design learning products that are then systematically tested in the field, evaluated and refined until a learning product is produced that meets certain standardizations, namely: effective, efficient, and quality.

In the researchers, they developed a learning tool based on the case method approach to improve students' critical thinking skills, the results of which were realized in the form of Semester Learning Design in which there were Student learning sheets and learning media. The development model used is the learning development model according to Thiagarajan (*Four-D Models*). According to Trianto (2010), this model consists of 4 stages of development, namely *Define, Design, Develop, and Disseminate* or adapted into a 4-D model, namely defining, designing, developing, and deploying or shortened to 4P.

At the preliminary research stage, the activities carried out include (a) analyzing the needs and context, namely analyzing the condition of students and analyzing the weaknesses of the learning tools used previously; (b) reviewing the literature, namely examining theories regarding learning models that are appropriate to the need to solve the problem of students' low critical thinking ability; (c) develop a consptual and theoretical framework for research i.e. design a conceptual and theoretical framework for developing products based on preliminary research and literature review. At the prototype making stage, researchers carry out activities that include (a) making prototypes, namely compiling semester learning designs (RPS), student worksheets (MFIs), and research instruments; (b) formative evaluation consisting of product validation and initial practicality trials in small groups. At the assessment stage, researchers conduct field trial activities to test the practicality and effectiveness of the products produced. The learning tools developed are expected to be of high

quality. According (Plomp, T & Nieveen, 2010) the general criteria of a quality product produced if it meets the criteria of effective, practical, and effective.

RESULTS

The product design that is developed is prepared based on the results of research on pre-existing products in the semester learning plan (RPS) as well as from the results of literature studies. The preparation of the research product design prioritizes aspects of mathematical creative thinking ability Aspects of creative thinking ability are focused on aspects of smoothness, flexibility, and authenticity in learning. These three aspects are integrated in the form of learning methods, especially in Structured Learning and Independent Learning activities. Meanwhile, face-to-face learning is devoted to cooperative learning.

Through cooperative learning, it is considered that it can optimize the 4C (Collaboration, Communication, Creativity & Critical Thinking) capabilities needed in industry 4.0. The products developed are learning tools in the form of Semester Learning Plans (RPS) and Student Activity Sheets. The learning tools have gone through validity tests, practicality tests, effectiveness tests and revisions. In the validity test, the final data of the validator's assessment of the learning device was obtained after the developer revised the Semester Learning Plan (RPS) and Student Activity Sheet (LKM) based on suggestions and comments from the validator. The data is in the form of quantitative data and qualitative data. Quantitative data in the form of average values obtained from the results of scoring the validation sheets of learning tools by the three validators. Quantitative data on the validity of semester learning plans (RPS) are presented in table 2 and quantitative data on the validity of student worksheets (LKM) are presented in table 3.

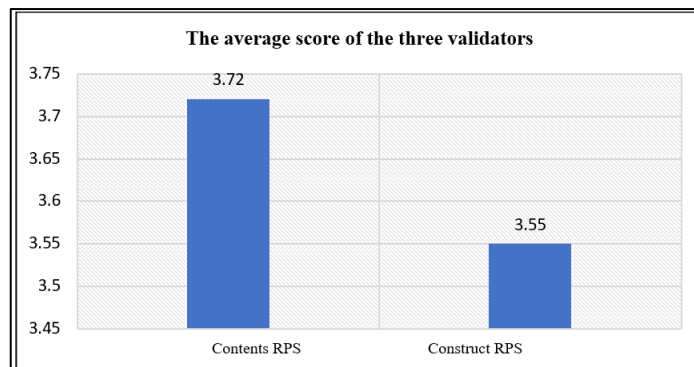


Figure 1. Quantitative Data on the Validity of Semester Learning Plans (RPS)

Table 2. Quantitative Data on the Validity of Student Worksheets (LKS)

Assessed aspects	Average scores of the three validators

Fill in the semester learning plan (RPS)	3,87
Semester lesson plan (RPS) construct	3,88

The results of the test of the validity of the content and construction of the semester learning plan (RPS) obtained an average of 3.84 semester learning plan validity scores (RPS). Based on the interval of criteria for the level of validity of the semester learning plan (RPS) presented in table 2, the semester learning plan (RPS) developed is valid and does not need revision. As for the Student Worksheet (LKM). From the validation results of the contents and contruk of the Student Worksheet (LKM), the average validity score of the Student Worksheet (LKM) was obtained at 3.88.

Based on the interval of the criteria for the level of validity of the Student Worksheet (LKM) presented in table 2, the Student Worksheet (LKM) developed has met the valid criteria and does not need revision. Although the semester learning plan (RPS) and Student Worksheet (LKM) are valid and do not need revision, the researcher still revises in accordance with the suggestions and comments of validators for the perfection of the semester learning plan (RPS) and Student Worksheet (LKM) developed. For practicality data from small group trials, it was obtained from student response questionnaires, practitioner response questionnaires, and observation implementation sheets. Quantitative data are shown in the following table 3 .

Table 3. Quantitative Data on Small Group Trial Results

No.	Data sources	Assessed devices	Score
1	Student questionnaire	Student Worksheet (LKM)	3,64
2	Semester learning plan implementation sheet (RPS)	semester learning plan (RPS)	3,51
3	Practitioner questionnaire	RPS and LKM	3,4

From table 3 above, filling out the student questionnaire obtained an average score of 3.64. Based on the interval of criteria for the level of practicality of the Student Worksheet (LKS), the Student Worksheet (LKS) developed has a high practicality criterion. The semester learning plan implementation score (RPS) was 3.51. Based on the interval of criteria for the level of practicality of the semester learning plan (RPS) presented in table 3, the semester learning plan

(RPS) is carried out in learning and has high practicality criteria. The results of filling out the practitioner questionnaire related to the learning device the score obtained from filling in the practitioner questionnaire is 3.4.

Based on the interval of the criteria for the level of practicality of learning devices presented in table 4, learning devices have high practicality criteria so that they do not need revision. Because in the results of small group tests, the results of learning tools are practical, the learning tools can be continued with field trials. Data on the results of practicality tests in the field were obtained from student questionnaires, semester learning plan implementation sheets (RPS), and practitioner questionnaires. The following quantitative data obtained are presented in the table.

Table 4. Practicality Field Test Results

No.	Data sources	Assessed devices	Score
1	Student questionnaire	Student Worksheet (LKM)	3,22
2	Semester learning plan implementation sheet (RPS)	semester learning plan (RPS)	3,42
3	Practitioner questionnaire	semester learning plans (RPS) and LKM	3,33

From filling out the student questionnaire, an average score of 3.22 was obtained. Based on the interval of criteria for the level of practicality of the Student Worksheet (LKM), the Student Worksheet (LKM) developed has high practicality criteria, so that the student's response to the Student Worksheet (LKM) is said to be positive. In table 4, there is data on the results of filling out the practitioner questionnaire which gets an average score of 3.33, so it can be seen that the learning device has high practicality criteria. It was explained that the results of the student questionnaire got a score of 3.22, the semester learning plan implementation sheet (RPS) got a score of 3.42, and the practitioner response questionnaire got a score of 3.33, so that the resulting learning tools had high practicality criteria. In the effectiveness test, the results of the student's critical thinking ability test were obtained from test 1 and test 2. The following are presented in figure 2 and figure 3 of the results on both tests.

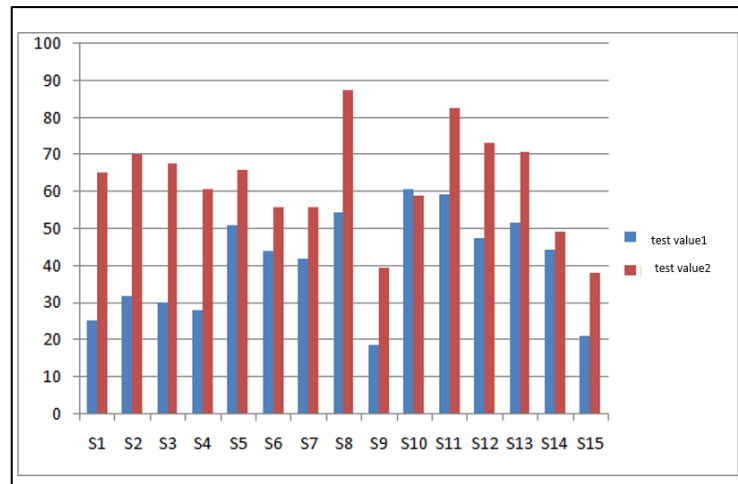


Figure 2. Test 1 and Test 2 Critical Thinking Skills Score Diagram (1-15 students)

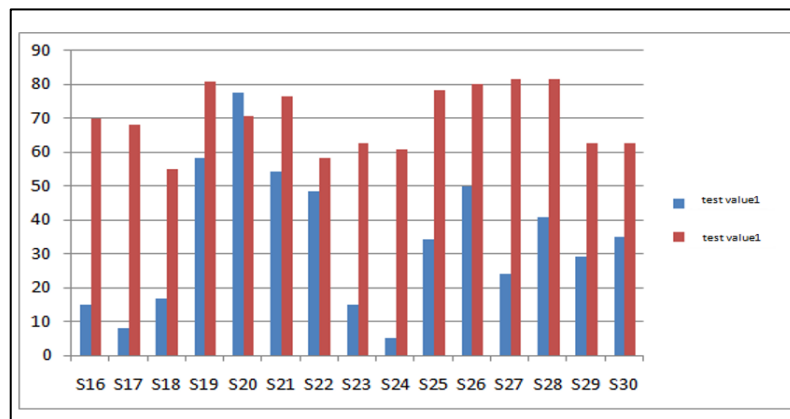


Figure 3. Diagram of Test 1 and Test 2 Critical Thinking Ability Scores (16-30 students)

In figures 2 and 3, it is known that the number of students who experienced an increase in critical thinking skills from test 1 to test 2 was as many as 30 students. So that the number of students has increased by 93%. If further analyzed according to the criteria for the level of improvement presented in table 3, then of the 30 students who experienced an increase, there were students who experienced low, medium, and high increases. students who experienced a low increase of 6 students. The students who experienced a moderate increase were 6 students. students who experienced a high increase of 16 students. These results showed that students experienced moderate and high increases of 73%.

Based on the increase in the average class of critical thinking ability which has increased by 74% and an increase in the number of students who have experienced a moderate and high increase of 73%, the resulting learning tools are included in the effective category because they achieve the research

objectives, namely being able to improve critical thinking ability. While classically the average score of test 1 is 37.31 and in test 2 it is 65. When analyzed, the average score of test 1 and test 2 increased by 74%. Based on the improvement criteria that the researcher has set out in table 3, then the value of this increase is included in the high increase. For that the learning tools developed are effective. Based on these improvements, the learning tools meet the effective requirements. In the validity and practicality test, quality data were also obtained in the form of suggestions and comments from validators, practitioners, test subjects, and observers. These suggestions and comments are followed up by revising the learning tools developed. Here are the revisions made based on those suggestions and comments.

DISCUSSION

The resulting learning tools already have valid, practical, and effective criteria, for which the characteristics that these learning tools have, among which are; First, the learning presented in the learning tools is based on problem solving, so that there are problems as the starting point of learning. The problems presented in learning are non-routine and challenging problems where the problem is complex and there is no way / strategy that is ready to be directly used to solve it, so it takes creativity from the problem solver to solve it (Lenchner, 1983: Posamantier, AS., & Krulik, 1998: Callejo, ML & Vila, 2009; Rasiman, 2015).

This is intended so that students' critical thinking skills develop. In accordance with the opinion of (Leader, L.F & Middleton, 2004) and the opinion of (Kerkman, D.D & Johnson, 2014) which states that giving challenging problems can give rise to the ability to think critically in students.

Secondly, there are *m* foreign-each problem designed with a different context, whose problem finds a solution there is also a problem of proving (Polya, 1973). This is intended so that students get a lot of information, find new situations, get used to applying their knowledge and think critically to solve the problem. So that critical thinking barriers such as lack of information and lack of practice students develop critical thinking according to (Peter, 2012; Snyder, L. G & Snyder, 2008) can be minimized.

Third, the problems presented in this learning are packaged in the form of Student Worksheets (LKM). The objectives are packaged in student worksheets (LKM) so that learning is student-centered. Student discusses in groups to solve the problems contained in the student worksheet (LKM), they will exchange opinions with each other and consider their respective opinions. In this way, it will reduce the role of lecturers as informers. The lecturer is only as a student's companion in solving problems, not an informer. So that students act as users of

information not recipients of information. Thus, the critical thinking ability of students will develop, this is in line with the opinion of (Duron, 2006) who stated that teacher-centered learning is very difficult to improve critical thinking skills, learning must be student-centered and involve students actively in learning, so that they will think critically.

Fourth, the problems presented in the Student Worksheet (LKS) are solved using problem-solving steps from (Polya, 1973). There are four effective steps in solving polya maslaah, namely understanding the problem, developing a problem-solving plan, implementing a problem-solving plan, and looking back at the problem solving that has been done. Polya's problem-solving steps are identical to the steps to promote critical thinking skills according (Facione, 2015), namely IDEAS. I=Identify the problem, set priorities and D = Deepen understanding and gather relevant information are synonymous with understanding the problem (understand the problem) in the problem-solving step. E = Enumerate options and anticipate consequences are synonymous with creating a devise plan at the troubleshooting step. A = Assessing situation and make a preliminary decision is synonymous with executing a plan (carry out plan) and looking back at the problem-solving step. S = Scrutinize the process and self-correct as needed is identical to rechecking the troubleshooting (look back) at the problem split step.

According to (Peter, 2012: Snyder, L. G & Snyder, 2008) problem-solving techniques with such steps can help students engage in critical thinking processes. Fifth, the problem-solving steps presented in the student worksheet (LKM) are presented with questions and commands for students. According to (Thompson, 2011: Walker, 2003) effective questions are a useful way for teachers to promote critical thinking and good questions are questions that guide students to think and encourage students to do interpretation, analysis, synthesis, critical thinking, and reflection, and make conclusions. At the stage of understanding the problem, questions and commands are aimed at inviting students to develop the ability to interpret the problem.

At the stage of drawing up a problem-solving plan, the commands and questions asked are aimed at inviting students to develop their analytical skills. First, students are asked to write down all the material related to solving the problem. Secondly, students are asked to draw up a problem-solving strategy. According to (Barake, F., 2015) lecturers should encourage students to strategize and follow the strategy until they find the answer, so that at the end the student will know whether the answer is logical and relevant or not.

At this stage of drawing up a completion plan, it is intended that students can develop their analytical skills which are higher-order thinking skills. In addition, students are also asked to consider the strategies that have been made

with the strategies presented in the student worksheet (LKM) by writing down the advantages and disadvantages of each strategy. Then the student will decide on the most appropriate and effective strategy for solving the problem. This is in accordance with the opinion of Walker (2003), to improve the ability to think at a high level the question that can be asked is that the question begins or ends with the words "compare", "what is the best and why".

At the stage of implementing the plan, aimed at the student developing his analytical skills, this stage the student is asked to focus on the plan that has been drawn up, linking the known information with the strategy that has been chosen in order to obtain the right solution. At this stage students also indirectly evaluate what they write until they find an answer that is considered appropriate. At the stage of looking back at problem solving, the questions and commands asked are aimed at so that the student can develop his evaluation abilities. This is in accordance with the opinion of Walker (2003) questions that can be asked to improve the ability to have a high level of interest can be questions that end or begin with the word "explain". The questions and commandments are asked so that students explain the truth and logic of the answers they have obtained assessing the truth and straightening out from each stage of problem solving. In accordance with the opinion of (Barake, F., 2015), when the student gets an answer, the lecturer should encourage the student to straighten out the answer, whether the answer is logical and corresponds to the given problem.

After explaining the truth and logic with the solutions they have done, at this stage students are also asked to draw conclusions about the final answer to the problem and write down logical reasons. In this step, students will easily write down the logical reasoning, because in the previous steps students can already explain and show the truth of the completion they have done.

Sixth, at the end of the lesson, the group representative is asked to present the results of the problem solving that has been carried out. This activity is intended to improve students' explanatory abilities, while other groups pay attention, comment, and respond. From this activity, class discussions will be realized, there are many different ideas and points of view from various groups that can be put forward, so as to improve students' evaluation ability in assessing the truth of the statements and ideas expressed by the group that presents and the group that provides comments.

Seventh, at the end of the lesson on the student worksheet (LKM) a place is provided to write down feedback from students, so that student writes down the level of his ability to solve problems, writes down the difficulties experienced when solving problems, and justifies if there are mistakes that have been made. Because with these activities students will monitor their abilities and justify their

mistakes. Cazier, (2010) think who states that writing feedback helps students assess the strengths and weaknesses of status in solving problems. This is proven by the results of this study which shows that there is a high increase in self-regulation indicators, which is 78.9%. With this activity, students will be more careful and consider in making decisions/answers, so that an in-depth analysis and evaluation of the statements given before deciding the answer is needed, according to the opinion of Udi and Cheng (2015) who stated that critical thinking activities can be in the form of giving dilemmas to students, by displaying problems that have answers that are always right, can be right can be wrong, or always wrong because by giving a problem students can evaluate a wide variety of situations.

Another characteristic that supports quality student worksheets (LKM) is also because the design of student worksheets (LKM) is unique and attractive, not to match other student worksheets (LKM), both from the cover, content, and shape of LKM. On the other hand, the resulting learning tools also still have shortcomings, including in the semester learning plan (RPS), the possibilities of activities that occur in the classroom have not been covered by all in the semester learning plan (RPS); in LKM, the language used is still considered difficult for some students to understand; the problems presented are not many related to everyday problems.

CONCLUSIONS AND RECOMMENDATIONS

This development research is concluded to produce learning tools in the form of semester learning plans (RPS) and student worksheets (LKM) which can improve critical thinking skills. valid, practical, and effective students. The validity score obtained was 3.86. The practicality score obtained is 3.32 which means it has high practicality criteria, while its effectiveness can improve students' critical thinking skills by 74%.

FURTHER STUDY

There are several suggestions that researchers want to convey for further research, including (a) learning tools can be developed to improve the ability to think critically, so as to increase learning tools as an alternative for lecturers in developing critical skills; (b) when conducting product trials, select the lesson time at the beginning of the class, not at the end hour, because the student's concentration decreases; (c) the problems presented in the learning should be packed with everyday problems so that students feel the benefits of the cake decoration teaching material as a daily problem solver.

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