Inquiry Learning Strategy To Improve Students' critical Thinking Skills

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Abstract:_The purpose of this study was to discover the learning tools in the civics subject at Citizenship Education Study Program in improving the Critical Thinking Skills of the Students at Universitas Muhammadiyah Makassar. It was also to produce learning tool design in the Course of Citizenship at the study program of citizenship education in improving students' critical thinking skills. This research was development research. This study developed learning tool for citizenship courses at the study program of Citizenship Education with an inquiry strategy to improve students' critical thinking skills. What the output resulted from this study was a lesson plan, student activity sheet, textbook (citizenship material). This study showed that the developed learning tools were in a good category. The practicability of the lesson plan was in a good category. In addition, Citizenship Textbook was interesting and varied, and student worksheets were created to explore the analyzing ability._

Keywords: - _Inquiry Strategy, Critical Thinking Skills, Citizenship Education_

I. Introduction

Learning throughout life becomes one of the keys of the 21st century as it meets the challenges of a rapidly changing world. The lifelong learning paradigm is based on the four main pillars underlying education and life. First, learning to know allows working in depth on some selected subjects. Second, learning to do emphasizes on the acquisition of skills. Third, learning to use the greater freedom combined with a sense of stronger responsibility to achieve common goals. Fourth, learning to live together is important to develop an understanding of other people, creating a new spirit, united to face the challenges of the future, and intelligently managing conflict and peace [1]. A good learning process for the success of learners is the learning that is in synergy capable of producing process, outcome, and impact of optimal learning which enables the realization of "better student learning capacity ". The components of a high quality and effective learning consist of at least three components namely learning design, implementation of learning, assessment process, and learning outcomes. Learning tools are an essential part of the learning design component. Therefore, one of the indicators for quality learning is the ability of educator in designing learning tools that can effectively meet the criteria regarding the ability of the educator to manage learning and student activities. In addition, students have a positive response and achievement test which is valid, reliable and sensitive. The learning tools were developed based on the model and strategies that can optimize the achievement of learning objectives both general purpose and special purpose which are followed by hidden curriculum contained in the expected competency. Learning tools which are arranged based on a student centered approach that is lately developed more prevalent is an effort to create the constructivist learning procedure. An attempt to facilitate the learners to build knowledge itself is the essence of constructivism. It is in line with the demands of the current learning implementation, which began to shift from the old paradigm that is oriented to behaviorism to the new standard that is oriented to constructivism. Therefore, the prepared learning tools and models or learning strategies should be oriented to student-centered approach.To be able to realize the student-centered approach, the critical thing to note is to pursue a meaningful and conducive learning process. Associated with this effort, learning activities are expected to focus on student learning that is how educators use all the skills and knowledge as well as knowledge to enable students in learning (active student learning). Based on the results of observations made by the researchers, the learning tools used in the study program of citizenship education at Universitas Muhammadiyah Makassar, have not been compiled based on the model and learning strategies oriented to student-centered approach. Learning tools which were used were still dominated by the teacher (teacher-centered approach). Therefore, a learning tool which is oriented to student-centered approach needs to be developed. It can be achieved through various models and strategies which are relevant regarding student characteristics, competencies, and learning materials. The development of learning tools that are tailored to the steps, models, and strategies that can facilitate students to build their knowledge is relevant to subjects oriented to the

development of teaching skills. It has been stated above that the learning process can be used as a reference model for developing the process to improve students' critical thinking skills.One of the learning strategies to train critical thinking skills is Inquiry's learning strategy. Inquiry's approach as an alternative to learning process needs to be developed to achieve competence and engage students' critical thinking skills through investigation and guidance. This is because critical thinking is part of Inquiry's learning [2]. Each step in the Inquiry learning model requires critical thinking skills. When students can use critical thinking skills properly, it is expected to make it easier to solve problems on the material being studied.Inquiry learning strategy is a series of learning activities that emphasizes on the process of thinking critically and analytically to seek and find their own answers to a questionable problem [3].The purpose to be achieved in this research is to develop the learning tool of citizenship with inquiry strategy in improving students' critical thinking skills and to know the effectiveness of development result of civic science learning tool with inquiry strategy in improving critical thinking skill.

II. Research Methods

2.1: Types of Research:
This research was a development research (R & D). This research developed the learning tool of citizenship subject at the study program of citizenship education with inquiry strategy to improve students' critical thinking ability. This development research refers to Thiagarajan's development model of Four-D models (4-D models) which are used specifically to develop learning tools [4].

2.2: Research Procedures:
The procedures of Thiagarajan model consist of four stages, namely defining stage, designing stage, developing stage, and disseminating stages [4].

2.3Research Instruments:
2.3.1: Validation Sheet for Learning Tools:
The validation sheet for the learning tools was used to obtain data on the validity of the learning tools. The validation sheet was filled by the expert who reviewed and evaluated the learning tools which are developed by the researcher. There were also validation sheet for the lesson plan, students' worksheet, and textbook.

2.3.2: Instrument of the Practicality of Learning:
Implementation of learning is observed by using observation sheets by two observers who can observe for all learning activities. The data of the practicality of learning is obtained by using the observation sheet of instructional learning on citizenship courses. The practicality of learning was calculated using observation instrument for reliability. The developed instrument is said to be reliable if it has a percentage of $\geq 75\%$ [5].

2.3.3: Instrument of Students' Learning Outcome:
The test result data is collected from the test results that have been implemented. The instrument of the learning result test used by the researcher developed by the researcher is in the form of a description test, and the test of learning result used in pretest and posttest is same. The analyzed data is the validity of the item, the sensitivity of the item, and the reliability of the test.

2.4: Data Analysis Technique:
The analysis of the development of learning tools and results of trying out that used a learning model with inquiry strategies in this study were as follows:

2.4.1: The Analysis of Learning Tools Validity:
The technique of analyzing the learning tool validity includes lesson plan, textbooks, students' worksheet, knowledge test, attitude assessment, performance test, and critical thinking skills of students using qualitative descriptive. Data were analyzed with an average score for each aspect.

2.4.2: The analysis of the practicality of Learning:
The technique of analyzing the practicality of learning was performed by trained observers to understand pieces observation which is correct. Then, the data were processed statistically in quantitative descriptive. Furthermore, the data were processed by calculating using the equation in measuring the practicality of learning tools.

2.4.3: The Analysis of Students' Activity:
Technique of analyzing data on the observation of students' activity was described descriptively, quantitatively and qualitatively. It described the students' activity during the learning activities by using Inquiry strategy. Students' activities during the learning activities were analyzed by using percentage.

III. Results

3.1: Learning Tools:
The design of learning tools developed in this study was learning tool which is commonly used in a learning process. The learning tools consisted of Lesson plan, textbook, Students' worksheet, and learning outcome test.

3.1.1: Lesson Plan:
The produced lesson plan has been developed according to the existing standard. It has been qualified by including several components, namely: course identity, competence (standard of competence and basic competency), material (subject and sub-topic, media and source, activity (consisting of 3 levels of activity ie introduction, core activities and cover) and includes the type of evaluation performed (results and processes).
By incorporating the steps of Inquiry's learning strategy in the learning activity component contained in the lesson plan, the results of this study have included Inquiry steps as an effort to grow student-centered learning. It is expected to create a learning situation which results in constructivism as stated by [6], [7]. The first expert validation recommends that the lesson plan can be applied in a learning process with small revision. Meanwhile, the second and the third validators recommend that the lesson plan can be applied without revision. In addition, after lesson plan is tried out twice, the lesson plan which has been developed by using steps of Inquiry can be stated that it is good and can be used for learning. The lesson plan in this research product in terms of appearance and content is quite different from the lesson plan as used by the lecturers who took citizenship courses. The lesson plan which is used before the study were made for several face-to-face or made for one subject. At each meeting (face to face) lecturers should develop lesson plan. However, the lesson plan did not contain steps of strategy or the used model. Therefore, the usual learning pattern still can be found, so that the method used only lecturing and question and answer and assignment only.

3.1.2: Textbooks:
The textbook as the product in this study is used as a study guide, either in learning activities in the lecture hall or in self-study activities. Learning materials are not textbooks, although they have something in common because they are used in a learning process. Textbooks of this study have met some of the criteria of instructional materials compiled by the learning experts. From the 13 criteria required for a teaching material or textbook as the product in this research 12 have met the criteria. One unfulfilled criterion is that this textbook does not explain how to study it. The researchers have difficulty in explaining how to learn textbooks because they are only used in face-to-face process. With the fulfillment of most of the criteria required for a good teaching material, the textbook as the research product is theoretically good and can be used in learning. The validity of textbooks has also been tested through expert validation and field validation processes. Through the validation process and testing experts both at first trial and the second trial have demonstrated that the textbook as a product of this research theoretically and practically can be used in the learning of the citizenship subject. Especially in designing textbook, the researchers expect that the student can choose a value more than just as a tool for learning. With an interesting design, the researcher hopes that the students will be inspired to create a design that gives more interest to the students when they design textbooks for learning. Thus, learning process in the citizenship subject has shown referenced the models that can be replicated by students that have an impact that disseminated (trickledown effect).

3.1.3: Students' Activity Sheet:
Activity sheets are often referred to as worksheets. The students' activity sheet is one of the components of teaching materials. Therefore, a good activity sheet is an activity sheet that meets the criteria of teaching materials. The student activity sheets created from this study have met all the required criteria. The components of this learning tool are same as the other components which have been through a validation process so that its validity is convincing enough to be used in the learning process, especially in the learning process in the citizenship subject.

3.1.4: Students' Learning Outcome:
The achievement of standard competence, basic competencies, and predetermined indicators can be measured by using the learning outcome test. In this study, the result of learning outcome test is in the form of a collection of questions about 5 items with the details as follows:

1. Number 1 consists of 1 question
2. Number 2 consists of 1 question
3. Number 3 consists of 1 question
4. Number 4 consists of 1 question
5. Number 5 consists of 1 question

In trial phase, the analysis of learning outcome test pay attention to the level of sensitivity of item, student learning result and student completeness. From result of the data analysis, it shows that the all students in pre-test are still below the average of graduation standard that is ≥ 75. While the post-test results showed that there is an increase in which from 25 students, only 5 students get <75. It is increased because in this lesson the students work in small groups or pairs which are heterogeneous in which they interact with each other either among friends or with the lecturer. It is in line with the view of [7] that learning can occur through social interaction between students and teachers and peers in the form of expert group discussions and groups of origin. In addition, appropriate challenges and assistance from teachers or peers are better able to get students moving forward into their nearest development zone where new learning takes place.

IV. Discussion

This study was a research and development study which was designed to describe the quality (validity, practicality, and effectiveness) of learning tools with inquiry learning strategy to improve students' thinking skills at citizenship education in Universitas Muhammadiyah Makassar. The development of learning tool in this study is designed to help students in improving students to think critically. It is rational and reflective thinking skills which are focused on what is believed to be or do [8]. Based on the recommendations of the expert validation, the first validator stated that the lesson plan could be applied in a learning process with minor revisions. Meanwhile, the second and the third validators recommend that the lesson plan can be applied without revision. The validity of textbooks has also been tested through expert validation and field validation processes. The validation process and testing experts both the first and the second trial have demonstrated that the textbook as a product of this research theoretically and practically can be used in the learning process of the citizenship subject. Likewise, the students' worksheet is the same as the other components which have been through a validation process so that its validity is convincing enough to be used in the learning process, especially in the learning process in the citizenship subject. The results of these assessments are in accordance with the opinion of [9] who stated that a model is good and high quality if it meets the criteria of validity, practicality, and effectiveness. The validity aspect is related to the validity of two things. First, the developed model should be based on a solid theoretical rationale (state of the art). Second, the components must be consistent model developed internally (internally consistent). In addition, after the lesson plan has tried out twice, the lesson plan which has been developed by using steps of Inquiry can be stated that it is good and can be used for learning, especially in learning the subject for Human Rights. Furthermore, in the trial phase, the analysis of learning outcome test focused on the level of sensitivity of the item, students' learning outcome, and student mastery. From result of analysis of data, it shows that all students in pre-test are still below the average of graduation standard that is ≥ 75. Meanwhile, the post-test results showed that there is an increase in which from 25 students, only 5 students get <75. The increasing occurs because in this lesson the students work in small groups or pairs which are heterogeneous in which they interact with each other either among friends or with the lecturer. This is in line with the view of [7] that learning can take place through social interaction between students and teachers and peers in the form of expert groups and group discussions origin. This is also in accordance with the opinion revealed by [10] that building productive learning community and motivating students to engage in meaningful learning activities are the main goal of learning. The fun learning process make students concentrate during the learning progress and are involved directly to find the concept and theories when they follow the learning process in the classroom. It is in line with the opinion stated by [11] that students should build on the knowledge of their own minds. Teachers can help this process by teaching some ways to make the information more meaningful and relevant to the students. It can be conducted by allowing students to discover or apply their own ideas and consciously use their strategies. Based on the results of the analysis, it can be concluded that the inquiry learning strategies can enhance students' critical thinking skills in the citizenship courses at Universitas Muhammadiyah Makassar.

V. Conclusion

Based on data analysis and discussion, learning tools which are appropriate to be applied in the citizenship courses at Universitas Muhammadiyah Makassar is the learning tools which are developed based on the Inquiry method consisting of the lesson plan, Textbook or teaching materials, students' worksheet, and learning outcome test.

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