

# Improving Students' Critical Thinking Skills through Multimedia Based Economic Learning

(Research and development on Ten Grade Students of Senior High Schools in Kuningan, West Java)

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**Abstract**—The problem behind this research is the low critical thinking ability of high school students in Kuningan, West Java. It is shown by there are still students who are still difficult in conducting the activities of asking and expressing opinions during discussion, besides there are still students who do not listen when the learning process takes place, it is also difficult to solve problems in learning. This study aims to determine the effectiveness of increasing students' critical thinking skills through the development of multimedia-based learning media. The method used in this study is the Research and Development (R n D). The research subjects used were high school students in Kuningan Regency. From the results of the study it is known that: Multimedia developed is effective in improving students' critical thinking skills.

**Keywords**—critical thinking ability; multimedia

## I. INTRODUCTION

Being knowledgeable, competent, critical, creative and innovative is one of the goals to build a foundation for the development of potential learners to become human as described in Government Regulation No. 17 of 2010 on the management and organization of Education. From these objectives learners are expected to have knowledge and skills in applying the knowledge obtained with critical thinking skills that will generate a creative and innovative soul within each learner. To realize these goals, it is necessary to increase the ability of critical thinking for students. Critical thinking is an ability to think and train a person in understanding and analyzing a problem, solving the problem and dig information from various sources. Critical thinking can improve students' ability to analyze ideas, choose and identify to make decisions.

Based on the results of the pre-research, it was found that there were still students who had low critical thinking skills, this was seen from the students who did not listen during the learning process, and there were still students who still had difficulty in asking questions and expressing their opinions when discussing. This shows that students' critical thinking skills are still low. Pre-research results regarding the critical thinking skills of ten grade students in Social Science class of Senior High School 2 Kuningan indicate that of the 34 students, only 9 students or 26.5% had reached Minimum

Criteria of mastery learning (KKM) or had high critical thinking skills, while the remaining 25 students with a percentage of 73.5% still showed low critical thinking skills.

Many factors affect the low ability of critical thinking of students; one of them is the role of teachers in learning that provides monotonous learning and less motivation. Whereas the role of teachers is very important in helping students in improving the ability to think critically [1-4]. In addition, teachers can use learning media in the form of ICT, where ICT is an important element in the learning process [5,6]. ICT learning media that can be used in improving critical students' thinking skills is multimedia. The use of multimedia in learning is able to develop student interaction with teachers and make the learning process become more dynamic and qualified [7-9].

States that in learning, the role of multimedia *is becoming increasingly important in the present*, because the media are designed to complement each other so that the whole system becomes efficient and efficient, where a unity becomes better than the sum of its parts (the whole is the greater of the sum of its part) [10]. The use of computer-based multimedia can be received in training and learning on the basis of enhancing the independent learning process as well as the active role of the students.

### A. Research Questions

Is multimedia developed effectively in improving students' critical thinking skills?

## II. RESEARCH FRAMEWORK

Education is a process where learners will experience an introduction process about various things so that students have knowledge and can develop the ability of creative thinking and critical thinking skills for learners. The students' critical thinking skills need to be developed so that students solve existing problems and can make the right decisions. To develop students' thinking ability, stimulus is needed when learning many factors that influence the thinking ability of students apart from the teacher is also required facilities that facilitate the learning process that is the use of learning media. Learning media used must also be interactive so that it can grow student

interest and can help students in learning. Multimedia can be one of the interactive learning media of students in learning activities. The use of multimedia in which there are images, video, sound, which can improve the ability of critical thinking where students can learn interactively in it. From the above, the framework of this research is in the following figure 1.

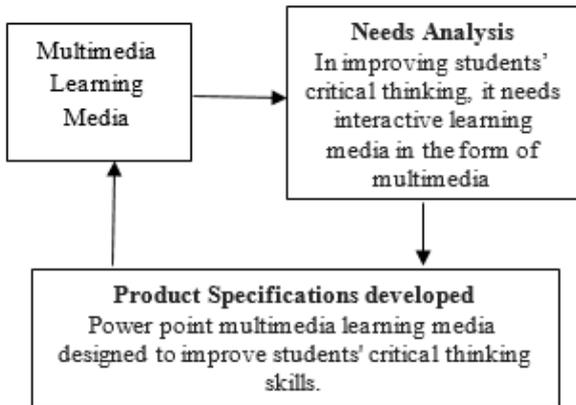


Fig. 1. Research framework.

A. Hypothesis

Multimedia is developed effectively in improving students' critical thinking skills.

III. RESEARCH METHODOLOGY

A. Research Method

The method used in this research is the method of research and development (R & D).

B. Participants

In this study participants to be studied are students of Senior High School 2 Kuningan, Senior High School 1 Jalaksana and Senior High School 1 Luragung presented in the following table 1:

TABLE I. RESEARCH PARTICIPANTS

No	Schools	Information	Group
1.	Senior High School 2 Kuningan	Individual	Limited trials
2.	Senior High School 2 Kuningan	Small Group	Limited trials
3.	Senior High School 3 Kuningan	Field	extensive trials
4.	Senior High School 1 Jalaksana	Field	extensive trials
5.	Senior High School 1 Luragung	Field	extensive trials

C. Data Collection Technique

The data collection techniques used in research are as follows:

1) *Questionnaire*: Questionnaire used for trial product development and revision phase. Questionnaire consists of three domains, the first for a material expert who aims to

obtain a correct assessment of the content of the subject matter, a second for media experts aimed at obtaining assessments for developed multimedia, and a third for students aiming to obtain data on usage assessment multimedia.

2) *Interview*: Researchers used interviews for pre-survey activities and obtained data of student interest in the use of multimedia learning media.

3) *Test*: Used to measure students' critical thinking skills after using multimedia learning media.

IV. FINDINGS AND DISCUSSIONS

A. Initial State of Economic Learning

The results of the preliminary study on the condition of economic learning process in high school at present still tends to use traditional (conventional) method based on learning outcomes. The condition of economic learning is currently still fixated on the explanation by the teacher and the source book owned by students and teachers which provides monotonous learning and lacks the existing learning media so that students still have less thinking ability.

B. Developed Learning Media Design

Products that are developed use technology and information-based learning media (ICT) by utilizing school computers or laptops as well as students and using projectors and their screens. This product is in the form of multimedia learning media where learning material is packaged in a power point software that is expected to facilitate teachers and students to carry out learning activities and can improve students' thinking skills. This interactive multimedia product can also help students to learn actively, creatively and fun.

The learning media design developed by the researcher is adjusted to the procedures developed by Tesmer 1993 and Borg and Gall 1983 by analyzing field needs by selecting the material of demand and supply which are subtitles of market balance, then identifying competence and materials to be used based on basic competence, syllabus of economics learning and characteristics of learners [11,12]. After that the development of learning program is done and producing multimedia instructional software in the form of power point. By doing the concept first, the collection of material, images, videos and sound effects, after the learning media was produced, validation was carried out by two material experts and two media experts to assess the product made. The products made in it consisted of the opening / main menu which is designed for the main display which shows the title of the teaching material to be studied, in the main menu there are 4 (four) menus namely instructions, learning activities, references and compilers.

C. Effectiveness of Multimedia Learning Media Developed

The effectiveness of multimedia developed in optimizing students' critical thinking skills. When optimized is defined as a significant difference between the results of pretest and posttest, the trial of developing learning media to improve critical thinking through research and development has shown

significant effectiveness in optimizing the improvement of thinking ability of learners.

Where t test results that compare the score / mean score of the test result (posttest) between the two classes (experiment and control) yields a sig value less than 0.05 indicating a significant change. This means that the optimization of the test results achieved by the experimental group students (consisting of 3 schools) was significantly higher than that obtained by the control group students.

Increase in student test results in a positive and significant also shows that students do activities with an optimum spirit and high motivation. States that interactive multimedia-based learning media is appropriate for use in learning and there is a significant difference in the improvement of critical thinking skills [13,14]. In addition, the use of instructional media can improve the creativity of teachers in applying economic learning process and effectively improve learning outcomes and improve students' critical thinking skills [15-17].

#### *D. Supporting and Inhibiting Factors*

This interactive multimedia product has advantages and disadvantages. The advantages of this product are they can be used in classical learning as well as for individual learning and Product can be used by all high schools, assuming that schools have facility which support the utilization of multimedia of interactive learning.

While the lack of interactive multimedia products is the background that is used in interactive multimedia products is usually normal, using gradation color only; problem evaluation in interactive multimedia products is few, in the form of multiple choice and in the use of multimedia can be used if when the electricity is on, when the power outage of this media cannot be used.

#### V. CONCLUSION

Based on the results of research and development carried out, it can be concluded that multimedia that is developed is effective in improving students' critical thinking skills. That is students become more enthusiastic in the learning activities so that students can discuss actively and ask questions more. The multimedia developed shows the quality of learning that are more quality and much better and can increase students' critical thinking skills.

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