The Development of Problem-Based Eclipse Multimedia in Pancasila and Citizenship Learning to Improve Learning Motivation of High School Students

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Abstract. This study aims to develop problem-based multimedia learning to increase students' learning motivation in high school. This study is development research (R & D) that uses the Hannafin and Peck model. Data collection techniques include interviews, questionnaires, and observation. Research data were analyzed qualitatively and quantitatively. This research was conducted at SMA N 6 Palembang. The results of the study show that the developed learning multimedia gets a score percentage of 97.5% based on the assessment of media experts, 90% based on material experts and, 90% based on linguists. During product trials in the one-to-one stage, learning multimedia got a score of 3.9 and a validity level of 78.3%. Furthermore, in the small group stage, the score was 3.8 and the practicality level was 76.3%. Then in the field test process, the percentage is 87.9%. So it can be concluded that the learning multimedia developed is very suitable to be used to increase the learning motivation of students in high school.

Keywords: Multimedia Learning · Pancasila and Citizenship Education · Learning

1 Introduction

Indonesia is a developing country that requires technology to support the progress of the Indonesian nation in global competition, especially since Indonesia must be ready to face the industrial revolution 4.0. In this revolution, Indonesia must prepare for new technology-based innovations. Not only in the economic field but also in the education field. The rapid development of communication and information technology has not only changed lifestyles but also the learning process in schools [1]. The pace of change in educational technology in the 21st century shows that learning emphasizes creativity, innovation, and collaboration that highly technologically advanced societies will require an in-depth level of knowledge of the disciplines [2]. In the era of Industrial Revolution 4.0, conventional learning should turn into technology-based learning with scientific mastery, metacognitive skills, being able to think critically, creatively, and be able to

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communicate or collaborate effectively. One of the reasons for conventional learning that is still carried out by teachers is the ability and skills of teachers who are still minimal in designing learning [3].

The Indonesian government designed 21st century learning through the 2013 Curriculum which requires students to learn independently by familiarizing students with applying 4C skills and abilities (Creativity, Collaboration, Communication, Critical thinking) in daily activities [4]. These skills must be possessed by every student in all subjects including Civics. The purpose of Pancasila and citizenship education is to make citizens who are intelligent, dignified and, active in the life of the nation and state [5]. Citizenship education should be able to encourage students to develop their identity, engage in global communities and build human relationships around the world [6]. Citizenship education ultimately aims to foster the younger generation to become smart and good citizens [7].

One of the subjects that continually changes in pace with the times, both in terms of content and concept, is citizenship or citizenship education [8]. The lack of learning media used in the learning process increases students' boredom towards Pancasila and Citizenship Education subjects, in this regard teachers need to develop innovative and technology-based learning media that can increase student motivation, especially in Civics subjects in high school, considering that at least 30 million children and adolescents in Indonesia use the internet and digital media. Technology is considered to be usable and effective as a cognitive tool as well as a learning medium [9]. Learning media that support the learning process and by technological advances, for example, as multimedia learning that can be used on computers, notebooks, or mobile phones in the form of applications.

Multimedia learning is a media application used in learning, the application can channel messages in the form of knowledge, attitudes, and skills so that it can attract the attention, attitude, and focus of students in understanding a learning material [10]. A product that combines many media, including text, voice, video, animation, and graphics and photography, is known as multimedia. The goal of multimedia is to convey information in a variety of ways [11]. Learning media that use technology in learning can help teachers communicate and provide interesting information for students. Due to greater trust in instructors and students to use technology in learning, the usage of media in the classroom can encourage favorable attitudes from both teachers and students [12]. In addition, the use of media learning in every learning process has become a demand or even a necessity for every teacher because media learning is considered to increase student motivation [13]. Therefore, teachers must be able to process appropriate learning media to increase student motivation in Pancasila and Citizenship education. Within certain parameters, well-designed and innovative learning that makes use of multimedia will be able to raise students' chances of learning more, understanding what they are learning, and improving their performance to increase competency accomplishment [14].

Many studies present evidence of the success of using instructional media to increase students' learning motivation, such as research conducted by [8] in the study of Developing an Android Based Mobile Application for Civic Education Learning which showed that learning media for Android-based mobile applications was very suitable for use in

civic education to increase students' learning motivation. Furthermore, research conducted by [15] stated that after being approved by numerous validators, learning multimedia based on Android smartphones is practical to use as a learning resource for class X high school students.

The learning materials created for this study were problem-based learning tools intended to boost students' motivation at SMA Negeri 6 Palembang on the material of state institutions in Pancasila and Citizenship education. This innovation is expected to be able to provide an interesting experience for students in Pancasila and Citizenship education to increase students' learning motivation.

2 Literature Review

Civic education has a role in introducing the values of honesty, compassion, respect, responsibility, and socio-political life [16, 17]. Then citizenship education is a very important main component in developing holistic education so that it is considered effective as a means to increase political awareness and youth participation (following politics, political knowledge, and political effectiveness) [18]. In line with the previous opinion, it was explained that knowledge, appreciation, critical thinking abilities, communication abilities, cooperative abilities, and dispute resolution abilities are all components of civic education [19].

In a broader sense, civic education's goal is to create decent citizens who are active in both their local and global communities. The purpose of Civics is to become citizens who participate with full sense and responsibility in life, obeying the values and basic principles of democracy [20]. Furthermore, the objectives of citizenship education are described in detail in the decision of the minister of national education No. 22 of 2006 concerning content standards [21]. According to the decree, civic education should provide students with the following skills:

(a) When addressing citizenship-related challenges, exercise critical thought, reason, and creativity.
(b) Engage in community, national, and state initiatives, as well as anti-corruption efforts, with vigor and responsibility.
(c) In order to improve their potential based on the qualities of the Indonesian people and be able to coexist with other nations, they must develop positively and democratically.
(d) Use information and communication technologies to interact with other nations directly or indirectly.

To accomplish the aforementioned goals of civic education, it is necessary to construct civics lessons that can motivate students to learn more by encouraging them to participate actively in the learning process.

Table 1. Media eligibility level table

Tingkat Kelayakan	Katagori
$80\% < x \leq 100\%$	Very good
$60\% < x \leq 80\%$	Good
$40\% < x \leq 60\%$	Good Enough
$20\% < x \leq 40\%$	Not good
$0\% < x \leq 20\%$	Bad

3 Methodology Results and Discussion

3.1 Research Place

This research was conducted at SMA N 6 Palembang, which is one of the public high schools in the city of Palembang, South Sumatra Province, Indonesia.

3.2 Research Design

Development research (R & D) is a study technique used to create a specific product or enhance an already-existing product and evaluate its efficacy [22]. Research development (R & D) is typically long-term or involves a number of stages and requires a significant amount of time. The goal of this research is to create a reliable, useful, and effective civics learning tool. These problem-based learning multimedia is designed and developed through three stages of the Hannafin and Pack model, namely, (1) need analysis stage, (2) design stage, (3) development and implementation stage.

3.3 Data Analysis

Both qualitative and quantitative analyses of research data are performed; the qualitative analysis use a descriptive technique, and the quantitative analysis employs a questionnaire to process and gather data from product trials. This research questionnaire uses a 5-point Likert scale. The presentation of the results of the media feasibility assessment can be seen in Table 1.

The table above shows that there are five categories for media eligibility, namely very feasible, decent, fairly decent, not feasible and very inappropriate. The percentages for each category are $80\% < x\ 100\%$, $60\% < x\ 80\%$, $40\% < x\ 60\%$, $20\% < x\ 40\%$, and $0\% < x\ 20\%$.

3.4 Data Collection Technique

The data in this research were collected using several techniques including interviews, questionnaires, and observation. In this study, researchers interviewed Pancasila and Citizenship subject teachers and school principals using an interview guide that contained

several questions regarding learning methods, learning media, student character, and learning facilities. The questionnaire is intended for material experts, media experts, linguists, and students. Furthermore, observations were made using the ARCS model to assess the level of motivation of students.

4 Results and Discussion Conclusion

The development of problem-based multimedia learning using eclipse on state institution materials in high school uses the Hannafin and Peck model which consists of three stages, namely, (1) need analysis stage, (2) design stage, (3) development and implementation stage. Each stage is described as follows.

4.1 Need Analysis Stage

Analyze the needs of students, teachers, and schools. The researcher interviewed several PPKn subject teachers and students at SMA Negeri 6 Palembang, to find out the problems and obstacles faced in the learning process. Then the results of the interviews showed that students felt bored and lazy to read the Civics Education books that had been provided because they were not interested in the appearance of the Civics Education textbooks which were filled with words, writings, and concepts in Civics learning, especially on the material of state institutions.

Research data also shows that Civics learning still uses a teacher-centered approach so that students are still considered less independent in the learning process, which ultimately results in a lack of active participation of students in learning activities. The learning media used are still very limited, as said before, which is only limited to power points. The researcher also analyzed one of the materials considered difficult by students, namely the material for state institutions taught in the first semester of the first year.

Teachers require instructional materials that inspire children to understand civics, according to the analyses' findings and data gathered from the field. The learning media created in this study are problem-based learning multimedia that teachers and students can use through computers or laptops, taking into account the needs of teachers, students, and schools.

4.2 Design Stage

The next stage is designing the product, the developer application used in developing this learning multimedia is the eclipse. At this stage the researcher creates a design concept that is used to make the product, the first step is to do that.

Developing an assessment instrument for learning multimedia: To determine its viability, the learning multimedia assessment tool is designed as a questionnaire. This tool attempts to gather information from students, linguists, media specialists, and material experts. The Likert scale used in this instrument has five categories: very feasible, decent, quite doable, not feasible, and very unworthy.

Designing the content to be included in the learning multimedia: consisting of several menus, namely the destination menu, KI and KD, Materials, Evaluation, and user profiles as well as for instructions for using this multimedia. The menu contained in the problem-based learning multimedia is presented in Fig. 1.

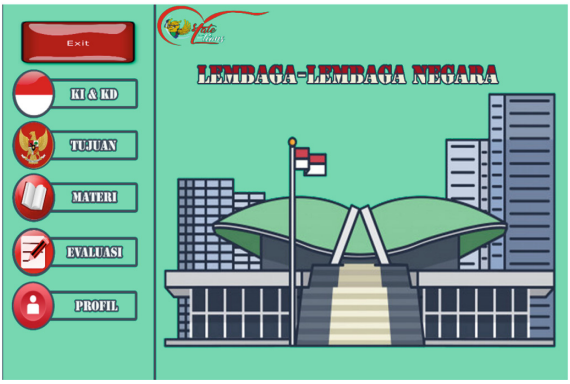

Fig. 1. Main Menu Learning Multimedia

4.3 Development and Implementation Stage

The next stage is the stage of development and implementation. This stage consists of application development, validation, and implementation which is presented as follows.

Development of multimedia learning: at this stage, the materials that have been prepared will be designed and then one by one will be combined into the eclipse software. Researchers use the software to combine all the prepared materials into a unified application in the form of multimedia learning that discusses the material of state institutions.

Validation of multimedia learning: After the learning, multimedia has been completed, the next step is to validate its feasibility before being tested on students. The validation of learning multimedia is carried out by material experts, media experts, and linguists. They are lecturers in the department of teacher education and preparation. On the basis of the application's created materials, materials experts evaluated the quality of the application's content and learning objectives for civic education and entered their evaluations into a 5-point scale-based questionnaire. Results of the material experts' validation revealed that the content and objectives were of 97.5% quality. Furthermore, the results of the validation carried out by media experts showed that visual communication was 90%. And finally, the results of the validation carried out by linguists showed that the accuracy of language use was 90%. Judging from the results of the validation that has been carried out, it can be concluded that this learning multimedia is considered very feasible as a learning medium and suitable for use by teachers in the learning process.

Implementation of multimedia learning: after validation, learning multimedia applications are implemented by conducting trials involving students of class X Science 1 which includes stages one to one, small group, and field test. Students were selected based on various abilities: high, medium, and low to be the sample of the trial. The results of the learning multimedia trials that have been implemented can be seen in Tables 2, 3, and 4.

Based on the data presented in Tables 2, 3, and 4, at the one-to-one stage, learning multimedia got a score of 3.9 and a validity level of 78.3%. Furthermore, in the small group stage, the score was 3.8 and the practicality level was 76.3%. Then in the field

Table 2. One-to-one assessment results

No.	Student Name	Score
1	NNAR	85
2	MA	80
3	MFRW	70
Total Value		**235**
Average Student Assessment		**3.9**
Media Practicality Level		**78.3%**

Source: Secondary data processed

Table 3. Small group assessment results

No.	Student Name	Score
1	AIT	85
2	AA	82
3	KQZ	81
4	MRA	75
5	AFH	75
6	MIR	60
Total Value		**458**
Average Student Assessment		**3.8**
Media Practicality Level		**76.3%**

Source: Secondary data processed

Table 4. Field test assessment results

No.	Indikator	Percentage
1	Attention	88.6%
2	Relevance	88.38%
3	Confident	89.15%
4	Satisfaction	85.5%
Total Value		87.9%

Source: Secondary data processed

test process, multimedia learning gets a percentage of 87.9% and is classified as very feasible to increase students' learning motivation.

4.4 Discussion

Multimedia learning is a learning media that is developing through several series and stages, learning multimedia consists of several combinations of graphics, photography, sound, video, animation, and text in a product whose objective is to share knowledge or information.

In general, the teacher is a facilitator for students in the learning process activities, who should be able to choose and determine the learning media that will be used. The ability of teachers to choose and determine learning media greatly affects the involvement and motivation of students in the learning process. Learning media is a part of learning resources, which are tangible objects that hold educational materials and encourage students to study [23].

Media learning helps teachers convey the content of learning materials and helps teachers communicate with students [24]. The use of learning media is one of the most influential factors to improve the quality of education. Students who learn using learning media can gain new experiences and have high curiosity [25, 26].

Multimedia learning is one of the learning media that is considered to be able to assist teachers in increasing learning motivation, learning outcomes, and student attitudes [27–29].

5 Conclusion

Multimedia learning is a learning media developed through three stages (Hannafin and Peck), (1) need analysis stage, namely the initial stage of analyzing the needs of teachers, students, and schools such as curriculum, learning media, and learning methods (2) design stage which refers to the process of designing products and the process of making research instruments, (3) development and implementation stage which includes product design development, expert validation, and product testing on one to one, small group and field tests.

Then based on the results of the validation from media experts, material experts, and linguists that problem-based eclipse multimedia is a learning media that is very suitable to be used to increase student motivation. The learning multimedia developed in this study focuses on certain topics in Civic Education learning, namely state institutions. Therefore, future research is expected to expand various topics of Civic Education learning.

Author's Contribution

The results of the study imply that problem-based eclipse multimedia is one of the instructional techniques that could boost students' motivation to learn. And in order to create a learning process that can motivate students to learn, the teacher, who serves as a facilitator of the learning process, must be able to create instructional material as creatively as possible.

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