



Development of E-Module Problem Based Learning Using Expert Validation

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Abstract. Creative thinking skills are one of the main skills that students must have from an early age to be able to work effectively, to be able to take control and create technology in the future. Creative thinking skills as mastery of 21st century skill is essential for future education of students. This study aims to determine the feasibility of E-Module Problem Based Learning to improve students' creative thinking skills. This was research and development that refers to the five steps of the ADDIE development model, namely analysis, design, development, implementation, and evaluation. This research has reached the development stage. Data collection in this study was carried out using a student need scale for E-module Problem Based Learning, material feasibility test scale, and media feasibility test scale. The product feasibility test was carried out by material experts, and media experts. The purpose of validation is to obtain media feasibility assessment data and comments for product improvement. The results of the feasibility test and practicality test were analyzed quantitatively using the conversion of four criteria. The results show the resulting E-Module Problem Based Learning is declared very feasible by material experts, and media with an average number of 3.8 and 3.35. It means E-Module Problem Based Learning can using for increase creative thinking skill of students.

Keywords: Creative Thinking Skills · E-Module Problem Based Learning

1 Introduction

Mastery of 21st century skills is essential for future education. The development of a rainbow of skills and knowledge by The Partnership for 21th Century Skills states that the main skills that must be possessed in the context of the 21st century are learning and innovation skills [1, 2]. Learning and innovation skills are related to critical thinking skills and problem-solving skills, communication and collaboration skills as well as creative thinking and innovation skills. These skills are basic skills in response to various life challenges from various perspectives, namely social, political, economic, or educational perspectives.

Learning in the 21st century needs to be done collaboratively, creatively and innovatively [2]. Teachers must plan and prepare comprehensively to enable contextual, participatory, active and creative learning for students [3]. The implementation of 21st

century competency activities can be presented in textbooks as learning modules. This pandemic era demands the creativity of guidance and counseling educators to use the right means in delivering service materials. E-Module is an approach to the teaching and learning process by utilizing Information and Communication Technology (ICT), a module with a computer-based interactive system and Android is one of them [4]. E-Module has the advantage of being connected to the internet to make it more accessible and caters to the target users who are teenagers. Another study obtained data that as many as 79.5% of internet users are children and adolescents [5]. Then internet-based media as a solution for BK teachers who are limited in class hours and still provide guidance and counseling services.

The researcher conducted a preliminary study on 87 students of SMP Negeri 2 Kretek Bantul on April 30, 2021. The preliminary study was carried out through a google form containing a scale of creative thinking skills to determine the level of creative thinking skills of students. Based on the results of the preliminary study, the results obtained indicate that the creative thinking skills of the students of SMP Negeri 2 Kretek Bantul which are included in the non-creative category are 24.1%.

Furthermore, Mrs. NT said that the online service procedure was carried out using lectures. The lecture method used in classical service activities shows that the Guidance and Counseling teacher is only active in explaining the material, and students are less involved in-service procedures. The lecture method makes students indifferent to the service material described by the Guidance and Counseling Teacher, and the absence of a response from students closes the possibility of students' creative thinking. Mrs. NT's answer revealed that the implementation of services using videos, pamphlets, and brochures was not effective for services.

The results of the interview are in accordance with research sources published in the journal, it was found that almost 70% of learning is dominated by theory and teacher-centered learning, such learning will certainly make students bored, the level of activity is low so that it will have an impact on absorption and capacity building power. Students who are not optimal [6]. Based on this, the Guidance and Counseling Teacher conveys the need for a method of delivering guidance and counseling services using appropriate and more interesting media so that students are actively involved in expressing their opinions, and asking questions and answering questions in more diverse sentences.

A preliminary study of media needs at SMP Negeri 2 Kretek Bantul using a scale, distributed via google form to 87 students, shows some of the media that students choose for the implementation of Guidance and Counseling services. The results of the google form analysis distributed by researchers found that 56.3% of students chose E-module media, 37.9% chose print module media, 4.6% chose leaflet media, 1.1% chose other media. The conclusion from the results of the preliminary study shows that the E-module media is very much needed by students at SMP Negeri 2 Kretek Bantul.

The use of electronic modules that train creative thinking skills in learning can be integrated into models that require problem solving activities. Problem Based Learning (PBL) is a model that can make students actively involved in meaningful problems [7]. Problem-based learning problems are characterized by complex activities in problem solving activities that encourage high cognitive engagement [8].

The purpose of the problem-based learning and teaching process model is to ask the teacher to motivate, and encourage students to give their opinion about the problems raised by the teacher during the teaching and learning process [9]. If the stages of different problem-based learning methods are carried out correctly and seriously, of course, by collaborating with guidance and counseling teachers, the objectives of problem-based learning activities will be achieved.

The e-Module developed by the researcher is composed of four parts, namely recognizing PBL, recognizing creative thinking skills, knowing the stages of PBL, and solving problems using the PBL stages. Each section presents materials and quizzes and the last section contains student cases and assignments to be completed based on the completion steps and using the PBL method. The contents of the E-Module are presented using quizzes, pictures and videos of everyday cases so that the material is easier to understand.

Based on the problems that appear, the developer feels it is important to produce an E-Module Problem Based Learning product to Improve Creative Thinking Skills for the students of SMP Negeri 2 Kretek Bantul.

2 Method

This type of research is research and development, producing a product in the form of Guidance and Counseling service media. This study aims to develop and produce an E-Module Problem Based Learning to improve the creative thinking skills of students of SMP Negeri 2 Kretek Bantul. The development model in this research is ADDIE. It consists of five stages including analyze, design, development, implementation, and evaluation [10].

3 Finding and Discussion

The product developed in the research is the development of Guidance and Counseling service media. To achieve the objectives to be achieved, the researcher uses the ADDIE development model from Dick & Carey which consists of five stages including analyze, design, development, implementation, and evaluation.

3.1 Analyze

The first procedure carried out in this research is to carry out a needs study and then proceed with data collection. Based on the interviews conducted, the following data were obtained: the unavailability of teaching and learning tools used by BK teachers at SMPN 2 Kretek Bantul that can provide independent learning facilities, especially on creative thinking skills for students, SMPN 2 Kretek Bantul has taken advantage of the use of mobile phones during online learning, the creative thinking skills of SMPN 2 Kretek Bantul students are not yet optimal, then based on the scale of creative thinking skills that were distributed to 87 students, the results were 24, 1%. The results of the needs questionnaire analysis through the google form distributed by researchers found that 56.3% of students chose E-module media, 37.9% chose print module media, 4.6% chose leaflet media, 1.1% chose other media.

3.2 Design

Before taking the development procedure, the main procedure that must be carried out is designing the product. E-Module Problem Based Learning is designed using the Flip PDF Professional application and Website 2 APK Builder Pro, besides that there are several supporting applications, namely Canva and Microsoft Word. The E-Module Problem Based Learning product is made in the form of a soft-file with an Android-based (.apk) format, which is an application that developers design to be able to be downloaded and installed using an Android phone.

The draft of the creative thinking ability E-Module that will be produced has several parts, the display of E-module Problem Based Learning per part can be seen in the description (Figs. 1, 2, 3 and 4).

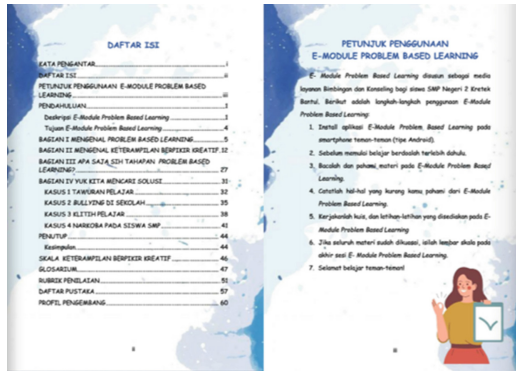


Fig. 1. Opening design pf E-Module PBL



Fig. 2. The design of material

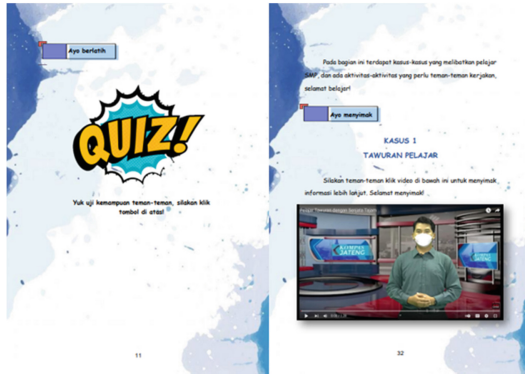


Fig. 3. The design of student activity



Fig. 4. Closing session design

3.3 Development

The procedure after designing the e-module is development. In this procedure, the initial draft of the E-Module must be checked whether it is valid or not by an expert validator. E-Module Problem Based Learning through validation stages, namely validation by media experts and material experts. The media expert, namely Prof. Herman Dwi Surjono, Ph.D is a Lecturer of PPs UNY Learning Technology. The material expert, namely Dr. Agus Basuki, M.Pd is a postgraduate lecturer in the Counseling Guidance Study Program at UNY. The purpose of validation is to obtain media feasibility assessment data and comments for product improvement.

The results of the media expert validation are detailed as follows: Based on the data from the assessment results from media expert validators (Table 1), it was concluded that the E-Module Problem Based Learning was very feasible. The average value obtained is 3.35 which is qualitatively included in the very feasible category ($X \geq 3.1$).

Table 1. Validation test result by Media Expert

No	Assessment Aspect	Score	Category
1	Display Aspects of Screen Design	3,00	Feasible
2	User-Easy	3,67	Very Feasible
3	Consistency	3,00	Feasible
4	Graphic	3,40	Very Feasible
5	Advantage	3,67	Very Feasible
	Average of all aspects	3,35	Very Feasible

Table 2. Validation test result by Material Expert

No	Assessment Aspect	Score	Category
1	Content Eligibility	3,78	Very Feasible
2	Language	3,80	Very Feasible
3	Presentation	3,86	Very Feasible
	Average of all aspects	3,80	Very Feasible

Furthermore, the product is validated by material expert lecturers (Table 2), the purpose of this validation is to obtain material feasibility assessment data as well as comments for product improvement. The results of the material expert validation are detailed as follows:

Based on the assessment data from material experts, it was concluded that the E-Module Problem Based Learning material was very feasible. The average value obtained from the scoring is 3.8 which qualitatively belongs to the very feasible category ($X \geq 3.1$).

4 Conclusion

The results of the feasibility test of the E-Module Problem Based Learning are based on the assessments of the experts, namely: Assessment of material experts, the product in the form of E-Module Problem Based Learning obtained an average score of 3.35 including the very feasible category. Assessment of media experts, the product in the form of E-Module Problem Based Learning obtained an average score of 3.8 including the very feasible category.

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