



The Innovation of Hybrid Module System Based on Literacy in Increasing Critical Thinking Activities for Millennial Learners in the Digitalization Era

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ABSTRACT

The era of digitalization requires millennial students to love reading and critical thinking. However, it was found that this was still a relatively very low percentage. This study aims to: (1) map the need for increasing critical thinking activities for millennial learners; (2) develop an innovative hybrid system module with a fond of literacy concept; and (3) test the attractiveness and feasibility of hybrid innovation system modules with the concept of fond of literacy. Overall, this study uses the R&D method. In this study, learning application and curriculum experts carried out the attractiveness and feasibility tests. The results of this study include (1) aspects of needs in increasing millennial students' thinking activities, namely the up-to-date learning environment (94%), increasing problem solving (90%), asking questions (84%), increasing understanding of other people's points of view (88%), and think futuristic (90%); (2) the hybrid innovation system module with the concept of fond of literacy which is developed has superior features of virtual training and level quizzes; and (3) hybrid innovation system module with the concept of fond of literacy which is developed feasible and interesting (the average expert test score is 92).

Keywords: Hybrid Module, Fond of Literacy, Critical Thinking, Millennial Students, Digitalization Era.

1. INTRODUCTION

The rapid development of the digitalization or transformation era has offered a number of conveniences for its users. Almost all activities can be carried out in an all-digital space [1]–[3]. This habit is carried out by almost all elements of society, especially millennials. In the Digital Age like today, you are certainly no stranger to the term 'Social Media', which is a forum for accommodating the creative works of the millennial generation. Of course, many platforms are widely used by the millennial generation to express themselves through their creative posts on social media. The role of digital technology is enormous in terms of creativity, education and even just following the existing trends. We can look for many things on social media, for example, young people who display their creative works on their personal Instagram page. Well, they are also known as 'content creators'. Where they

take advantage of digital platforms to express the results of their works so that they can be enjoyed by the wider community [4], [5].

Information technology has provided many advances for human life. Moreover, the increasing use of computers and the internet to help facilitate various jobs and daily activities [6], [7]. Through computers and other devices that are the products of its development, including gadgets, all kinds of information can be accessed and disseminated easily through the Internet network. In its development, UNESCO strengthens the term digital literacy. According to the United Nations Educational, Scientific and Cultural Organization, digital literacy is related to skills (life skills) because it does not only involve technology but includes the ability to learn, think critically, creatively, and innovatively to produce digital competencies [8], [9].

Digital literacy is an indicator in education and culture to create a critical and creative way of thinking for students. Digital literacy triggers students from passive recipients of information to become active. Digital literacy is understanding and using various information widely and freely obtained through digital assistance [10], [11]. The broad and free use that is meant is of course, within the scope of norms, ethics and culture at this time, the ability of the community to understand information in the digital realm that is developing in the internet network is increasingly advanced. They have started to be able to filter out which information is suitable for consumption and what is then categorized as negative information. This is known from the results of the 2021 Indonesia Digital Literacy Index which the Ministry of Communication and Informatics held in collaboration with the Katadata Insight Center (KIC). Overall, Indonesia's 2021 Digital Literacy Index reaches 3.49 from a scale of 1-5, or an increase from the previous year's achievement of 3.46.

Students are one of the elements in society that can play a greater role in the development and progress of Indonesia [12]. Students are always referred to as intellectuals. Students have the opportunity to lead in the process of social change. Along with the position of students in society or the state, there are two main roles that seem to have always been student activities so far. First, as a corrective force against deviations that occur in various aspects of human life. Second, as a continuation of community awareness of current issues and awareness of accepting alternative changes proposed or supported by the students themselves so that society can develop in a better direction [13], [14].

The benefits of critical thinking for students are important to know. Critical thinking is one of the abilities that everyone needs to have [15]-[17]. A person who thinks critically often has benefits for successful leadership. Someone who has the ability to think critically will certainly better understand the logical relationship between ideas, arguments, and reasoning. There are many benefits of critical thinking for everyday life. Based on these urgent problems, this study aims to: (1) map the need for increased critical thinking activities for millennial learners; (2) developing an innovative hybrid system module with the concept of fond of literacy; and (3) testing the attractiveness and feasibility of the hybrid innovation system module with the concept of fond of literacy.

2. METHOD

In this study, the Research and development (R&D) method is used. In this study, the R&D stages used were (1) potential and problems, (2) data collection, (3) product design, (4) design validation, (5) design revision, (6) product testing, and (7) Product revision. In the first step, mapping the need to increase critical thinking

activities for millennial learners is carried out. At this stage, a questionnaire instrument is distributed to lecturers, teachers, and students. The results of the questionnaire data analysis are used as the basis for application/product development. Furthermore, the validation test was carried out by two teams of experts: learning application experts and vocational education curriculum experts. Pictures of the stages are shown in Figure 1.

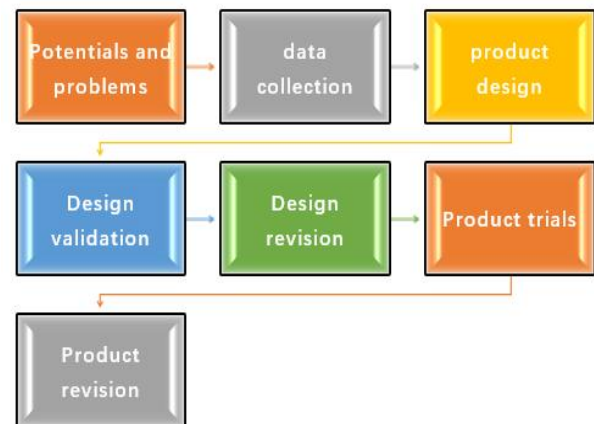


Figure 1 Research Stages used.

Based on Figure 1, product development is carried out using the ADDIE model. The ADDIE model as the name implies is a model that involves the stages of model development with five development steps/phases including: Analysis, Design, Development or Production, Implementation or Delivery and Evaluations). the purpose of the ADDIE development research model is to produce or develop a product that is tested empirically. To produce a new and tested product, it is necessary to have documented and measurable stages of activity at all stages of development/manufacturing.

3. RESULTS AND DISCUSSION

3.1 Map of Needs to Increase Thinking Activity of Millennial Students

Based on the results of data collection through a questionnaire to lecturers, teachers, and students, data was generated as described in Table 1. The results of mapping the needs for increasing the thinking activities of millennial students.

3.2 Hybrid innovation module

Literacy-Based Hybrid Module System Innovation which was developed based on the previous stage's needs mapping analysis. The innovation (product) developed is in the form of a hybrid module system

which contains items to increase millennial student literacy. This product has several main features, including a virtual training menu to increase literacy motivation, materials related to types and types of digital literacy, augmented reality-based material video features, a question and answer menu with literacy experts, and a news menu related to the latest world literacy developments. Display of products that have been developed is shown in Figure 2.



Figure 2 Developed Product Design.

4. DISCUSSION

The learning system in education moves dynamically in a more renewable direction. This renewable learning is caused by digitalization in everyday life. Digitization of education or digital era learning is a learning process that utilizes digital technology as a tool in the learning process [18], [19]. This digital technology can be in the form of computers, tablets, cell phones, and learning applications. The world of education is the most important asset in a country, how come education does not teach many things about scientific or non-scientific knowledge? Indonesia is one of the developing countries where technology consumption is very high, such as users of smartphones, PCs, android and others [3], [20]. Therefore, education cannot progress in the digital era if this is accompanied by education. This research also reveals that there are 5 aspects of the need to increase the thinking activity of millennial students. These aspects are an up-to-date learning environment, increased problem-solving, increased questioning and answering skills, increased understanding of other people's perspectives, and futuristic thinking.

Problem-solving abilities are interpreted as abilities that can help us to determine the source of problems and find effective solutions. The ability to solve problems or problem-solving skills is one of the main abilities sought by the world of work [21]–[23]. This is because those with problem-solving abilities tend to be more independent and responsive to problems when working. In addition, someone with this skill will tend to think quickly in finding a solution to a problem. Likewise, with the skills to ask and answer. This study revealed

that improving questioning and answering skills is one of the skills that must be improved. One quite effective way to improve children's questioning skills is to start learning by asking questions. Previously, they had to convey the material to be studied. After that, you can ask students to write down questions about what they want to know about the material that will be studied that day. Asking is an activity that always exists in communication, including learning communication. Without questions, the interaction between us and students will not be awakened [24], [25]. High-level questioning skills are needed in critical reading, when one does not only limit oneself to understanding and remembering existing information, but also assesses the material being read. At the stage of the ability to ask students using high-level questions. Where these questions are in the form of synthesis questions and analysis questions and evaluation questions.

This study also reveals other important aspects. The next aspect of the need to increase the thinking activity of millennial students is to increase futuristic thinking. Basically, futuristic thinking is related to the ongoing learning process, including preparing students to be able to solve problems. The ability to think futuristic can be empowered through aspects related to the concept of critical thinking. critical thinking plays an important role in problem solving [26], [27]. The ability to think futuristic will increase when combined with futuristic learning concepts as well. The concept of futuristic learning is a learning concept designed for students in the future by considering the essence and main functions of education in developing the quality of human resources in the future. The concept of futuristic learning is used to prepare oneself for the future, therefore a wise attitude is needed in facing globalization, namely by preparing oneself as best as possible by taking advantage of the opportunities that are open in it [28]–[30].

These educational changes include, first, the existence of a control, namely students born in the millennial generation in the digitalization era do not like things that are bound by traditional schedules besides that they also do not like monotonous learning. In addition, they prefer to learn on their own by using communication tools that can reach an infinite world [18], [31]. Thus they will obtain information from various sources that are connected without limits to achieve their target knowledge. This is in accordance with this research related to the use of innovative learning media. This research aims to develop a Literacy-Based Hybrid Module System Innovation. The mobile app-based hybrid innovation has several main features, including a virtual training menu to increase literacy motivation, material related to types and types of digital literacy, augmented reality-based material video features, a question-and-answer menu with literacy experts, and a news menu related to the latest

world literacy developments. . The first benefit of the innovation that is carried out is that it can provide a solution to solve a problem that occurs. The next benefit of implementing innovation in education is that it can increase productivity in teaching and learning activities between students and teaching staff. Thinking of a new idea or ideas regarding the creation of innovation will create something new [15]–[17]. In implementing the

use of information and communication technology in the development of educational innovations, there are various obstacles such as a lack of internet access and a lack of understanding of teachers in utilizing digital technology in a particular area. So it is necessary to socialize and the government's efforts together with the community in developing digital literacy.

Table 1. The results of mapping the needs for increasing the thinking activities of millennial students.

No.	Aspect	Indicators	Average (%)
1	Up-to-date learning environment	Environmental comfort	94%
		Study situation	
		Alignment with motivation to learn	
2	Problem solving improvement	Differences and analogies	90%
		Identify critical items	
		Decision-making	
3	Improved questioning and answering skills	Active information seeking	84%
		Analysis of question-and-answer points	
		Strategy analysis of main points	
4	Increased understanding of other people's points of view	Analysis of persuasion techniques	88%
		Understanding other people's conditions	
		Increased self-sensitivity	
5	Futuristic thinking	Forward vision	90%
		Update knowledge and information	
		Analyse developments over time	

Table 2. Expert validation scoring results

No.	Indicator	Average from expert
1	Media fascination	96
2	Ease of operation of media	92
3	The combination of colors in the media	88
4	The media is clear and easy to understand	88
5	Media can be used as an alternative learning	96
6	The suitability of learning media with the objectives, characteristics, and learning resources	90
7	The ability of the media to apply the concept	90
8	Media can motivate students	98
9	The developed media can make students participate in the learning process	90
10	The effect of the use of media in learning	92
<i>Average</i>		92

5. CONCLUSION

The conclusions in this study include several things. First, the aspect of needs in increasing the thinking activity of millennial students is an up-to-date learning environment (94%), increasing problem solving (90%), question and answer (84%), increasing understanding of other people's points of view (88%), and thinking futuristic (90%). Second, the hybrid innovation system module with the concept of fond of literacy being developed has superior features of virtual training and tiered quizzes. Third, the hybrid innovation system module with the concept of fond of literacy being developed is feasible and interesting (the average expert test score is 92).

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