The Development of Interactive Learning Media on System Approach in Learning Material in Economics Education Study Program State University of Medan

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Abstract. The purpose of this study was to see whether Teachmint, an interactive learning platform, could be made to work. This is ADDIE model research and development. The subjects of this study were media experts and material experts. Surveys are employed as tools for gathering data. While the media expert feasibility evaluation's result is also included in the very excellent criteria, the material expert feasibility evaluation's result is included in the very good criterion.

Keywords: Development, Interactive Learning Media, Feasibility

1. Introduction

Everybody is facing challenges as a result of the Fourth Industrial Revolution. Industries and sectors are being affected by rapidly disruptive technology. Science and information technology advancements have a significant impact on many aspects of human life, including education, which is essential for realizing human potential and producing exceptional human resources. Undang-Undang No. 20 Pasal 3 Tahun 2003, which addresses the National Education System, summarizes this by saying that its goal is to develop students' potential to become human beings who respect and revere God Almighty, as well as to be honorable, healthy, knowledgeable, capable, creative, independent, and responsible members of society [1].

Education quality enhancement is successful if the aims are met while simultaneously raising the bar for human resources. All higher education must keep making the human resource market more competitive. In the face of the 4.0 industrial revolution, universities need to be able to develop and provide education-based competency in order to generate graduates who are competent in their specific disciplines. In the 4.0 industrial revolution, the learning process in education must be capable of incorporating technology.

Since lecturers will be teaching college students from the digitally native millennial age, they need to enhance their expertise in order to be ready to adapt to the 4.0 industrial revolution. Lecturers are the cornerstone of higher education at universities. They are knowledgeable about a wide range of rapidly changing technology, which presents challenges for educators. In order to be ready to instruct millennial-generation college students, lecturers need to keep learning new things.

The CEO of Alibaba Group, Jack Ma, emphasized that one of the main issues is education at the 2018 World Economic Forum. Human existence may encounter issues in the

future if the educational system is left unchanged. Right now, the main concern is education. It will become a problem in thirty years if the methods of the educational system aren't changed [2]. Thus, in the context of the Fourth Industrial Revolution, instructors need to be highly skilled in information technology. Technology can make it easier for instructors to organize their resources, which will improve student learning.

One of Indonesia's universities, State University of Medan, has the responsibility of turning out competitive graduates who are certified instructors. As a crucial part of State University of Medan, the Economics Education study program helps the university fulfill its mission. The results show that interactive learning resources are necessary to support the process of teaching and learning. College students' grasp of the System Approach in Learning content was found to be somewhat inadequate when they discussed the same topic with KDBK instructors. The odd semester of last year's college students' midterm test results indicate a poor comprehension of the System Approach in the learning materials. To have thorough understanding of the material, this study is essential and has to be done. The description states that "The Development Of Interactive Learning Media On System Approach In Learning Material In Economics Education Study Program State University Of Medan" is the research and development project that the researchers are interested in working on.

2. Methods

The aim of this study was to develop interactive educational materials using Teachmint for System Approach in Learning. Research and development (R&D) is a methodical, purposeful approach to research that aims to discover, formulate, improve, develop, produce, test, and make products, models, methods/strategies/ways, services, procedures that are superior, novel, productive, meaningful, and efficient [3]. The ADDIE (Analysis, Design, Development, Implementation, Evaluation) development approach is used in this study's creation. In addition to being methodically designed and grounded in the theoretical underpinnings of the learning design under development, the model's ease of comprehension was a deciding factor in its selection. In an attempt to address learning issues pertaining to educational materials that are appropriate for the requirements and characteristics of college students, this model is created programmatically using methodical actions.

The type of data gathering tools used determines the research outcomes. The caliber of the research itself is therefore determined by the caliber of the data. Consequently, there has to be a degree of trust in the research tools and a degree of truth (factual) in the data that is collected. Teachmint uses a range of data collection methods for creating its instructional materials, such as observation, media expert validation questionnaires, and material expert validation questionnaires. Observation is one method that researchers may do to gather data in order to pinpoint problems that require more inquiry. Input and evaluation from material experts are used to create learning materials with a material focus. When producing learning materials that concentrate on media characteristics, media experts offer advice and evaluations.

3. Results and Discussion
3.1 Results

The following are the research and development results for Teachmint-based instructional products that use the ADDIE development process :

a. Analysis

The initial step conducted by the researchers was to conduct the analysis at the Faculty of Economics, Economic Education Study Program, State University of Medan. The study done involves examining the learning styles of college students, the media that is utilized in the classroom, the teaching strategies employed by professors, and the facilities that will assist researchers in gathering data. This phase serves as an analytical step that informs the decision of whether to go to the next stage of adopting a position on the current issue.

1. Field study

Students' degrees of focus vary as learning is occurring. Among these include inadequate study habits, a lack of contact during class, and a student's less-than-ideal ability for absorption. Among the activities that take place in the classroom when learning is taking place are students talking to their friends and getting tired during class. Because of this tendency, pupils frequently miss what the speaker is saying. Corrective measures are required to address current issues by taking a close look at the current circumstances. In order to ensure that no student misses any current learning activities, learning media that may be utilized to distribute learning materials or activities online are required. Notifications are sent to students through the system in an equitable manner. Thus, it is evident that creating educational media is essential.situated Teachmint.

2. Study of literature

The State University of Medan library is used by researchers to examine materials and conduct object searches. Scholars make use of all pertinent data and concepts found in books written by reliable writers (with a greater emphasis on scholarly work), recognized scientific publications, and research findings.

b. Design

The researchers examine the educational materials in this part.Based on the findings of the analysis step, Teachmint carefully considers the quality of the content in order to expedite the media assessment process and classify the media as a continuous learning medium.

1. Designing learning instruments

This section's design focuses on the created learning activities, evaluations, and patterns. The creation of learning activities is limited to sending out materials, participating in online forums, completing tasks, and taking tests or quizzes using Teachmint, a learning media. Meanwhile, after all learning activities have been finished, the evaluation plan is implemented.

2. Story board

At this point, the researchers create a design based on the storyboard, which includes coming up with a product idea, selecting the materials to be utilized, creating test questions, and creating Teachmint-based learning media. At this point, the researchers also develop the essential research tools, such tests and questionnaires.

c. Development

Researchers arrange activities in Teachmint-based learning materials at this step of the process. Subsequently, the researcher sent media specialists and material experts Teachmint's science-based learning materials for evaluation. The evaluations

provided by media and material specialists serve as a guide for future developments. Because it yields the best outcomes at the implementation stage, this step is crucial.

1. Arrangement of activities

   The researchers identify the activities that will be employed via optimal arrangement in order to meet learning objectives in order to prevent failure, foresee, or reduce issues that may come later, so that learning occurs in a methodical and guided manner. This activity's preparation includes introducing the topic, assigning homework, holding discussions, and creating exams and quizzes.

2. Product validation

   The material expert's validation is examined from a number of angles. Utilizing a questionnaire, the material's viability is assessed. A Likert scale is used as a measuring scale for calculating ratings on surveys. This is the material expert's assessment of viability. The Likert scale is used to gauge an individual's or a group's attitudes, opinions, and perceptions of social phenomena [4].

Table 1. Material Expert Validation Result

No.	Aspect	Total Score	Average	Criteria
1	Material Aspect	36	4.50	Very Good
2	Aspect of Question	23	4.60	Very Good
3	Language Aspect	8	4.00	Good
4	Implementation Aspect	15	5.00	Very Good
	Overall Average		4.53	Very Good

According to the table, the material expert evaluated the material aspect on average at 4.50, the question aspect at 4.60, the language aspect at 4.00, and the execution aspect at 5.00. When all the evaluations were averaged, the result was 4.53, meeting the "very good" standard.

Two perspectives are examined in the evaluation of the media expert's validation. A questionnaire is used to assess the viability of the medium. This is the feasibility evaluation from the media specialist.

Table 2. Media Expert Validation Result

No.	Aspect	Total Score	Average	Criteria
1	Software Engineering Aspect	49	4.45	Very Good
2	Visual Communication Aspect	63	4.50	Very Good
	Overall Average		4.48	Very Good

The media expert evaluated the software engineering component on average at 4.45 and the visual communication aspect on average at 4.50, based on the table. When the total evaluations were averaged, the result was 4.48, meeting the "very good" requirement.

3.2 Discussion

Studies have indicated that using Teachmint, an interactive learning platform, as a learning aid is a very real possibility for college students. This aligns with the perspective of Amri, who asserts that the degree of device design development determines the viability aspect [5]. The paper "Development of Online-Based Interactive Video Media using Teachmint Application for Natural Science Learning," authored by Yani Sulastiani, Sholih, and Isti Rusdiyani, aligns with the results of this study. The article's material expert test results were 77.35% in the same category, while the media expert validation test results were 93% in the highly feasible category [6]. This research and development's methodology is modified from This study process modifies Sezer et al.'s ADDIE development model [7]. An interactive learning platform called Teachmint has been reviewed for viability by one material expert and one media specialist. Teachmint in System Approach in Learning Media, based on the evaluation of subject matter experts, When learning material is examined from the perspective of the material elements, the evaluation results in a total score of 45, with an average score (X) that falls between 4.20 and 4.5. The "Very Good" condition is met by the average score. This outcome demonstrates that Teachmint, which is based on learning media and the system approach to learning material, is a very excellent option for learning that has been evaluated by subject matter experts based on the elements of the content offered in the learning media. Teachmint in System Approach in Learning material assessed from the design aspect yields an evaluation with an average score of 31, with an average score (X) of 4.42, which is in the range of $X > 4.20$, based on the assessment of media experts. The "Very Good" condition is met by the average score. This outcome demonstrates that Teachmint in System Approach based learning media is excellent for use in learning, as evaluated by media experts based on the design of the learning media.

4. Conclusion

The ADDIE development model is used in this study and development. The purpose of this analysis step is to determine the requirements for creating Teachmint, an interactive learning platform. The tasks that must be completed are: a) a requirements analysis; and b) a literature and field study. During the design stage, learning objectives for the system approach are determined, interactive learning materials based on Teachmint are designed, and the necessary instruments are prepared. The process of creating educational media involves implementing plans created during the design phase, such as incorporating more designs and design materials into applications that have already been decided upon. Next, validate Teachmint for validators, an interactive learning platform. The material expert's feasibility evaluation is rated as very good at 4,53, and the media experts' rating is also very good at 4,48.

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