

MICROLEARNING-BASED E-MODULE LEARNING INNOVATION FOR CAPITA SELECTA COURSES

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Abstract

This study aims to develop an interactive e-module based on microlearning for the Kapita Selektta Pendidikan course at the Faculty of Education, Universitas Negeri Makassar, in response to students' needs for more modern and interactive teaching materials. Using the ADDIE model, this research went through five stages: Analysis, Design, Development, Implementation, and Evaluation. Initial analysis results indicated a strong need for interactive and digitally accessible learning materials. Based on this, an e-module was designed, then developed using Canva, and integrated into a flipbook format through Heyzine to enhance accessibility. Validation by content and media experts showed that this e-module has a very high level of validity, and trial results demonstrated high practicality among students. The study concludes the importance of integrating technology into teaching materials to enhance student engagement and understanding of the learning content, showcasing the effectiveness of the e-module as a relevant and appealing learning tool in the context of higher education.

Keywords: e-Module, Microlearning, Learning

Abstract

Penelitian ini bertujuan untuk mengembangkan e-modul interaktif berbasis microlearning pada mata kuliah Capita Selecta Pendidikan Fakultas Ilmu Pendidikan Universitas Negeri Makassar, sebagai jawaban atas kebutuhan mahasiswa akan bahan ajar yang lebih modern dan interaktif. Dengan menggunakan model ADDIE, penelitian ini melalui lima tahapan yaitu Analisis, Desain, Pengembangan, Implementasi, dan Evaluasi. Hasil analisis awal menunjukkan adanya kebutuhan yang kuat terhadap materi pembelajaran yang interaktif dan dapat diakses secara digital. Berdasarkan hal tersebut dirancanglah e-modul yang kemudian dikembangkan menggunakan Canva dan diintegrasikan dalam format flipbook melalui Heyzine untuk meningkatkan aksesibilitas. Validasi ahli materi dan media menunjukkan bahwa e-modul ini mempunyai tingkat validitas yang sangat tinggi, dan hasil uji coba menunjukkan tingkat kepraktisan yang tinggi di kalangan siswa. Kesimpulan penelitian menegaskan pentingnya mengintegrasikan teknologi dalam bahan ajar untuk meningkatkan keterlibatan siswa dan pemahaman materi pembelajaran, menunjukkan efektivitas e-modul sebagai alat bantu pembelajaran yang relevan dan menarik dalam konteks pendidikan tinggi.

Kata Kunci: e-Module, Microlearning, Pembelajaran

How to Cite: Nining S H, Merrisa M, Arnidah, Andromeda V S. (2024). Microlearning-Based E-Module Learning Innovation for Capita Selecta Courses. *Indonesian Journal of Educational Technology*, 3 (1), 26-32.

INTRODUCTION

Current technological developments encourage the improvement of human resources, especially in the field of education. Education aims to provide knowledge and teach skills to humans, so as to cause positive changes in themselves. Education is inseparable from the learning process which is an interaction between learners and learning resources. Learning is a phase of changing individual behavior and mindset in a positive direction that involves interaction with the environment and cognitive processes, from not knowing to knowing new things. Basically, the teaching and learning process



consists of three main components, namely educators, students, and learning resources used by educators.

In Education, especially at the college level, to achieve educational goals have standard characteristics of the learning process that must be owned by students. The standard is regulated by the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 3 of 2020 article 11 paragraph 1, which reads: "Learning characteristics consist of interactive, holistic, integrative, scientific, conceptual, thematic, effective, collaborative, and student-centered properties." From the characteristics mentioned, the learning process in higher education should prioritize the development of creativity, and adjust to the needs of learners to develop independence in learning and knowledge formation. In developing learning resources, educators need the right learning theory to be used as a way of looking at understanding how students learn so that the desired learning goals can be achieved optimally.

In general, there are four known learning theories, namely: behavioristic theory, cognitive theory, humanistic theory, and constructivistic theory. Behavioristic learning theory considers that learning is essentially the formation of a relationship between experiences perceived by the five senses with the tendency to act or the relationship between stimulus and response (Bunyamin, 2021). This behavioristic theory focuses on the development of behavioral changes that manifest as observable and measurable learning outcomes. In contrast to cognitive learning theory, which emphasizes learning processes rather than learning outcomes. Cognitive learning theory in Piaget's view as "cognitive development", emphasizes that the thought process is carried out as an activity that takes place gradually, not just a specific intellectual function (Herliani, et al. 2021). The learning process needs to be adjusted to the stage of cognitive development of learners, because they not only respond and receive stimuli, but also process the information obtained and think to generate an idea and develop knowledge. Humanistic learning theory emphasizes cognitive and affective influences in the learning process. The cognitive aspect includes mastery of science, while the affective aspect involves the formation of behavior. Humanistic theory focuses more on meaningful learning than the learning process itself. In another perspective in Habermas's view, learning is strongly influenced by interaction, both with the environment and with other individuals (Yuberti,

2016). Therefore, humanistic learning theory tends to be more abstract and closer to the realm of philosophical studies than the realm of learning psychology. Constructivistic learning theory understands the learning process obtained through the formation (construction) of knowledge by the learners themselves. Glaserfeld, Dettencourt and Matthews suggest that the knowledge an individual acquires is the result of his or her own personal formation (Thu, H., & Thu, H. 2023). Knowledge is produced by man based on his personal experience, through a continuous process of formation and new understanding every time reconstruction occurs. Referring to the explanation above, this study uses



cognitive and constructivistic theories as a learning perspective (Efgivia, M, et.al 2021).

The development of technology and information is growing rapidly along with the increasing needs of humans. Information and communication technology that is growing rapidly causes the world of education to also have a greater importance in order to run together (Nag, H., & Roul, D. 2023; Gafiatulina, N., et.al. 2020). The changing times always bring new challenges in the field of education such as advances in information and communication technology which make students tend to be less interested if they search and read information from printed learning sources so that efforts are needed to develop interesting learning resources. Facing these problems, appropriate solutions are needed in order to improve and improve the quality of education, especially in higher education. Higher education refers to post-secondary education organized by higher education institutions. The learning process in a college environment requires good integration with information and communication technology.

Microlearning is an educational approach that emphasizes delivering learning material in small, digestible chunks focused on a specific topic. The importance of microlearning lies in its ability to adapt to modern learning needs, especially in a fast-paced world full of distractions. With microlearning, learners can quickly and efficiently access important information, allowing them to overcome time and concentration limitations. Additionally, this method supports continuous learning, where materials can be accessed anytime and anywhere, thereby increasing flexibility and learner engagement. In a professional context, microlearning enables employees to stay up-to-date with the latest skills and knowledge without having to leave their work for extended periods. Thus, microlearning becomes an effective tool in enhancing individual competence and productivity in a dynamic work environment.

METHOD

This research uses the ADDIE development model which consists of five main stages, namely Analysis, Design, Development, Implementation, and Evaluation (Szabo, D. 2022). The following is a detailed description of each stage in this research methodology.

1. Analysis

The analysis stage is the initial stage of the product development process. The purpose of this stage is to identify the needs of students or problems that occur in the learning environment. In this study, the analysis was carried out by: Problem Identification: Free interviews were conducted with students and lecturers who teach the Capita Selecta Education course at the Educational Technology Study Program, Faculty of Education, Makassar State University. This interview aims to obtain information about the problems faced in the learning process. Identification of Student Needs: Data collection related to lecture conditions and learning media needed by students was carried out through questionnaires filled out by 20 students. This questionnaire identifies student needs for digital e-module teaching materials.

2. Design



At the design stage, the e-module product to be developed is designed based on the results of the needs analysis. The steps taken at this stage include: Prototyping: Creating an e-module prototype that provides an overview of the appearance and content of the e-module. This prototype was created to make it easier to plan programs into the Canva application. Material Preparation: Compile an overview of the content of the material to be included in the e-module. This material is prepared in accordance with the curriculum of the Capita Selecta Education course.

3. Development

The development phase aims to produce and validate the product from development. At this stage, the steps taken are: Design Specification Translation: Translates design specifications into physical form using Canva software for e-module creation. After the product creation is complete, validation is carried out by media experts and material experts to assess the display and content aspects displayed on the media. Product Revision: Based on suggestions and inputs from validators, the product was revised to ensure the quality and effectiveness of the e-module.

4. Implementation

Products that have passed validation and are declared feasible by experts are then tested on students. The implementation phase involves: Small and Large Group Trials: The trial was conducted in two groups, namely small groups consisting of 10 students and large groups consisting of 20 students. This trial aims to determine the quality, practicality, and effectiveness of the developed product.

5. Evaluation

The final stage in the development process is evaluation. The purpose of this stage is to examine the validity and practicality of interactive microlearning-based e-modules that have been tested before. The steps taken in the evaluation phase include: Product Assessment and Revision: Evaluation is carried out to identify the advantages and disadvantages of e-modules as well as to revise products based on suggestions from students and lecturers. Goal Achievement Measurement: Measuring the achievement of learning objectives to determine the effectiveness of the product developed. The evaluation results are used to identify product successes and provide recommendations for improvements for the development of similar products in the future.

RESULTS AND DISCUSSION

Development Results

This research produces products in the form of microlearning-based e-modules developed through five stages of the ADDIE model, namely Analysis, Design, Development, Implementation, and Evaluation. This e-module is intended for the Capita Selecta of Education course in the Educational Technology Study Program, Faculty of Education, Makassar State University. Here are the results of each stage of development:



Analysis Phase

The initial stage carried out is the identification of needs. The identification results show that interactive teaching materials are still limited so that the development of e-modules is needed. A questionnaire filled out by 20 Educational Technology students showed that 86% of them felt digital teaching materials were easier to use and made the learning process more interesting.

Design Stage

At this stage, material preparation and e-module prototyping are carried out using the Canva application, which is then exported to flipbook format through the Heyzine website. This flipbook link can be accessed by students through any device connected to the internet.

Development Phase

The product that has been designed is then validated by two validators. The validation results show that this e-module has very valid qualifications with a score of 97% from media experts and 93% from material experts. Some revisions were made based on the advice of validators to ensure the quality and effectiveness of the e-modules.

Implementation Phase

The validated e-modules were then tested on 10 students (small group) and 30 students (large group). The trial results showed that this e-module was very practical with a percentage of 86% in small groups and 88% in large groups.

Evaluation Phase

The evaluation phase is carried out to assess the final quality of the e-module. Based on the results of the trial and the responses of the lecturers, this e-module was declared very valid and practical with an overall score of 93%.

Discussion

The process of developing this e-module begins with a needs analysis which shows that interactive teaching materials are indispensable in learning *Capita Selecta Education*. This need is in line with the findings of Kurniawan (2021) which states that good teaching materials must be designed with regular and aligned development procedures.

A needs analysis was also carried out on lecturers who showed that teaching materials in the form of e-modules were not yet available and were needed to support learning. Good teaching materials can increase student learning independence, as stated by Nana (2019) that teaching materials can be used by students to study independently anytime and anywhere.

The use of Canva software in the development of e-modules helps create attractive and interactive designs. According to Wijayanti (2018), the use of technology in the development of teaching materials can increase student engagement through the use of text, audio, video, and animation (Kadarisman et al. 2022)

The results of validation by media and material experts show that this e-module is very valid and



feasible to use without the need for significant revisions. Small and large group trials have also shown that the e-module is practical and easy for students to use.

CONCLUSION

Based on the results of research and discussion, some of the main conclusions can be drawn as follows:

1. Overview of Student Needs Identification

The initial stage of this research is to analyze the needs of Educational Technology students of the Faculty of Education to obtain initial information. The results show that interactive teaching materials are still limited, so the development of interactive e-modules is needed. Students are interested in using e-modules in the lecture process of the Capita Selecta of Education course. E-modules are considered as a solution to increase student engagement and understanding of the course material.

2. E-Module Development Design Overview

The e-module design phase is carried out using the Canva application and the results are exported to the flipbook view using the Heyzine website. The resulting output is a flipbook link that can be accessed by students through various devices connected to the internet. This design facilitates accessibility and flexibility in using teaching materials without the need to download a special application.

3. Level of Validity and Practicality of E-Modules

The product that has been developed is then tested for validity by two validators. The average percentage results from material expert validators and media experts show that this e-module has very valid qualifications and is worth testing. The practicality of the e-module is also assessed based on the results of small and large group trials, as well as the responses of course lecturers. The results show that this e-module is very practical and feasible to use in the learning process.

4. Future researchers are advised to focus on several areas to develop microlearning. First, evaluate its effectiveness in various contexts to understand the long-term impact on knowledge retention. Second, explore technologies such as artificial intelligence and virtual reality to enhance the learning experience. Third, research optimal instructional design, including duration and delivery methods, will be highly beneficial. Lastly, studies on learner preferences and behaviors, as well as implementation in various cultures, will ensure that microlearning can be widely and inclusively applied. This research will help advance microlearning as an adaptive and efficient learning method



REFERENCES

- Bunyamin, B. (2021). *Learning and Learning*. Jakarta: UPT UHAMKA Pres
- Efgivia, M., Rinanda, R., S., Hidayat, A., Maulana, I., & Budiarjo, A. (2021). Analysis of Constructivism Learning Theory. *Proceedings of the 1st UMGESHIC International Seminar on Health, Social Science and Humanities (UMGESHIC-ISHSSH 2020)*. <https://doi.org/10.2991/assehr.k.211020.032>.
- Gafiatulina, N., Shishova, N., Volkova, D., & Topchiy, I. (2020). Applying of information and communication technologies in the education process. *E3S Web of Conferences*. <https://doi.org/10.1051/e3sconf/202017515031>.
- Herliani, M. P., Boleng, D. T., & Maasawet, E. T. (2021). *Theory of Learning and Learning*. Klaten: Lakeisha Publishers.
- Kurniawan, A. (2021). Good Teaching Material Development Procedures. *Journal of Education*, 12(1), 45-56.
- Nag, H., & Roul, D. (2023). Perception Of Students On Effect Of Information And Communication Technology In Higher Education. *Towards Excellence*. <https://doi.org/10.37867/te150208>.
- Nana, S. (2019). The Importance of Teaching Materials in Independent Learning. *Journal of Educational Technology*, 10(2), 23-34.
- Thu, H., & Thu, H. (2023). Applying Constructivist Theory In Teaching Mathematics At Grade 2. *International Journal of Education and Social Science Research*. <https://doi.org/10.37500/ijessr.2023.6219>.
- Wijayanti, F. (2018). Use of Technology in the Development of Teaching Materials. *Journal of Educational Sciences*, 15(3), 67-75.
- Yuberti. (2016). *Dynamics of Educational Technology*. Lampung: Institute for Research and Community Service (LP2M) IAIN Raden Intan Lampung.
- Szabo, D. (2022). Adapting the Addie Instructional Design Model in Online Education. *Studia Universitatis Babeş-Bolyai Psychologia-Paedagogia*. <https://doi.org/10.24193/subbpsyped.2022.1.08>.
- Kadarisman, Marisa, Asnah M.N. Limbung and Suryo Prabowo. (2022). Training on the Development of Utilization of Digital Teaching Materials for Teachers to Improve Student Learning Outcomes. *JTP - Journal of Educational Technology*. <https://doi.org/10.21009/jtp.v24i3.31799>.

