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Development of an Economic Sociology E-Module Using the ADDIE Model to Improve Student Learning Outcomes

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ABSTRACT

The implementation of the Independent Learning Independent Campus (MBKM) policy requires transforming learning in higher education by providing innovative, contextually relevant teaching materials. However, learning in the Economic Sociology course in the Economics Education Study Program still relies on conventional teaching materials that are less interactive and do not optimally facilitate student learning. This study aimed to develop a valid, practical, and effective Economic Sociology e-module. This research employed a Research and Development (R&D) approach using the ADDIE model, consisting of analysis, design, development, implementation, and evaluation stages. The participants involved one material expert, one media expert, three lecturers, and 33 students of the Economics Education Study Program at Pamulang University. Data were collected through observations, interviews, questionnaires, and learning outcome tests. The results showed that the developed e-module was categorized as very valid based on assessments from media experts (90%) and material experts (91%). The practicality assessment indicated that the e-module was very practical based on lecturer responses (89%) and student responses (86%). Furthermore, the effectiveness test using a paired sample t-test demonstrated a significant improvement in student learning outcomes after using the e-module ($p = 0.000 < 0.05$). Therefore, the Economic Sociology e-module is considered valid, practical, and effective as a digital teaching material to support learning in higher education.

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1. INTRODUCTION

Higher education institutions are increasingly required to transform teaching and learning practices through the integration of digital technologies and blended learning approaches to meet the demands of contemporary education [1]

Universities need to develop digital teaching materials because both students and lecturers increasingly rely on digital learning environments to support effective learning and improve learning outcomes [2]. It plays an important role in improving higher education by encouraging innovation, research, and development that can help create qualified, professional human resources to meet the demands of industry in the future [3].

In higher education, economics students need to understand that economic activities are embedded within broader social realities. Therefore, the study of Economic Sociology is essential for helping students analyze economic behavior in relation to social structures, institutions, and cultural contexts [4]. Along with the importance of the role of basic education in the National Education system, understanding the social conditions of the community is inseparable in an effort to improve the quality of education. The development of educational quality cannot be separated from the community's social conditions. This is where sociology has an important role as a science that examines social interactions, values, and the structure of society. For this reason, understanding the history of the emergence of sociology is the initial foundation for seeing the relationship between education, society, and the economy.

Economic concepts are often abstract and theoretical, making it difficult for students to connect them with real-world situations. As a result, learning resources should facilitate the contextualization of concepts to improve understanding and application [5]. Durkheim emphasized social facts as "ways of acting, thinking, and feeling" that have power beyond the individual, while Marx highlighted class conflicts in capitalist societies.

The abstract nature of economic concepts creates learning difficulties for students, necessitating instructional materials that connect theoretical concepts with real-world situations [6]. Many economic and socio-economic concepts, such as social embeddedness, economic institutions, social stratification, and market behavior, cannot be directly observed in everyday life. As a result, students frequently struggle in understand the relationships among these concepts and apply them to real-world situations. This condition is particularly evident in Economic Sociology courses, where students are required to analyze economic phenomena through a social perspective and to understand the interactions among economic behavior, social structures, institutions, and cultural values.

Economic sociology material encourages students to understand that economic activities are not only about numbers, markets, and policies, but also about humans as social actors, the social networks they form, the institutions that play a role, and the culture that influences economic behavior. Therefore, the development of teaching materials is very important for increasing the effectiveness and efficiency of learning, such as electronic modules, thereby making the learning process more interactive, contextual, and in line with the needs of the times [7]. Economic Sociology encourages students to understand that economic activities are not only related to numbers, markets, and policies, but also involve humans as social actors, social networks, institutions, and cultural values that influence economic behavior. Consequently, students are required to comprehend complex relationships among social and economic phenomena, which are often conceptual and abstract in nature. Such characteristics may create learning difficulties, particularly when students are unable to connect theoretical concepts with real-world situations.

These challenges are further compounded by the fact that the teaching materials currently used in Economic Sociology courses remain largely conventional, text-based, and less interactive. As a result, they provide limited opportunities for students to explore concepts independently, engage actively in the learning process, and relate theoretical knowledge to contemporary socio-economic issues. Therefore, the development of innovative teaching materials, such as electronic modules (e-modules), is essential to enhance the effectiveness and efficiency of learning. E-modules can provide interactive, contextual, and flexible learning experiences that support independent learning and help students develop a deeper understanding of Economic Sociology concepts in accordance with the demands of the digital era.

In line with the importance of developing innovative teaching materials, the advancement of science and technology is increasingly encouraging reforms in the use of learning media that are more effective and relevant to current educational needs. The development of information technology has transformed society into a network-based structure supported by global information flows [8]. The development of science and technology has encouraged reform efforts in the use of various technological results, namely in the learning process. It is possible that, as time goes on and demands increase, teachers and lecturers will also need to use the tools provided by schools. The advancement of science and technology has encouraged innovation in education, helping create high-quality human resources.

The implementation of the Independent Campus policy is a strategic step in realizing student-centered learning and is adaptive to the dynamics of real-world needs. The learning process in an independent campus is one manifestation of student-centered learning, which is essential. Learning in an independent campus provides challenges and opportunities for the development of innovation, creativity, capacity, personality, and student needs, as well as developing independence in seeking and finding knowledge through realities and field dynamics such as ability requirements, real problems, social interaction, collaboration, self-management, performance demands, targets and achievements. Through a well-designed, well-implemented independent learning program, students' hard and soft skills will be effectively developed [9].

The development of information system technology is the main driver of efficient, effective learning to support the implementation of the independent curriculum. In this modern era, information and communication technology have developed rapidly, with a positive impact on education, which was once conventional and is now shifting toward technology-based education.

The use of learning media is very important in helping students understand abstract material, as without it the learning process tends to focus solely on text, making it difficult for students to understand concepts in depth [10]. Learning media, such as animated videos and simulations, have been proven to increase students' motivation to learn and encourage active involvement in the learning process [11]. The use of media in the learning process can foster new desires and interests, stimulate learning motivation and activities, and even exert psychological influence on students. With technological advances, print modules can now be reformatted into electronic modules. The development of electronic modules as a learning

medium is an effort to provide ease of learning to improve the quality of learning, so that more interesting learning is created in the classroom.

The development of digital teaching materials in the form of e-modules is a learning innovation that aims to increase the efficiency and effectiveness of learning and make it easier for students to understand the materials [12]. One of the main advantages of e-modules is their ability to support independent learning. Through digital access, students can learn at their own pace, revisit learning materials whenever needed, and explore course content beyond classroom instruction. This feature is particularly important in Economic Sociology courses, where students need sufficient opportunities to reflect on and understand complex and abstract concepts independently.

An e-module is a curriculum-based digital teaching resource designed to support flexible, independent learning by providing structured content accessible on electronic devices. Electronic modules are interactive learning media that incorporate text, images, animations, and videos to enhance the learning experience [13].

Electronic modules play an important role in the learning process, helping teachers explain subject matter. The advantage of electronic modules over other print media is their interactivity. Electronic modules packaged in digital form can be read on a laptop or computer. The electronic module also includes features such as learning videos, animations, images, and audio [14]. Unlike printed teaching materials, e-modules offer greater interactivity, flexibility, and accessibility. E-modules can integrate multimedia features, interactive exercises, and hyperlinks that enhance student engagement and understanding. In addition, they allow students to access learning materials anytime, anywhere on digital devices, thereby supporting flexible and independent learning. These characteristics make e-modules particularly suitable for higher education learning environments in the digital era.

Electronic modules are used as independent teaching materials that are effective in improving student learning outcomes through the presentation of structured, flexible, and accessible materials [15]. As independent learning materials, e-modules provide structured content that supports students in achieving learning objectives and improving learning outcomes. Their digital format enables flexible access to learning resources, thereby fostering greater learner autonomy and engagement.

The results of research related to the use of electronic modules show that, as a product learning innovation, the developed electronic modules are included in the category of feasible learning media. Educational institutions are advised to urge educators to adopt an open mind and an attitude toward technology, and to integrate it into learning activities [16].

Other results suggest that, currently, learning using electronic media is very attractive to students in the learning process because of students' interest in learning new things, a learning model that motivates and stimulates learning activities, and a positive influence on students. Besides that, it can also eliminate boredom in the learning process [16]. Previous studies have consistently reported that e-modules are feasible and effective learning resources across various educational contexts. Several studies conducted in higher education have shown that e-modules can enhance students' learning outcomes, engagement, and independent learning skills. Similarly, research in secondary education has demonstrated the effectiveness of e-modules in supporting concept mastery and learning motivation. Despite

these positive findings, most previous studies have focused on science, mathematics, or vocational subjects, while the development of e-modules for social science courses remains limited. In particular, studies on Economic Sociology courses remain scarce, even though the subject involves abstract, conceptual content that may benefit from contextual digital learning materials. Therefore, further research is needed to develop and evaluate e-modules tailored to the learning characteristics and needs of Economic Sociology students in higher education.

Students in the economics program need to be equipped with critical, analytical, and social thinking skills to understand economic phenomena comprehensively. The electronic modules developed are expected to help students analyze the relationships between individuals, social groups, and economic systems with a multidisciplinary approach. In addition, interactive, contextually relevant electronic modules can increase students' motivation to learn, strengthen their ability to relate theory to real economic practice, and foster social awareness of economic impact in society.

Universities also have a responsibility to continuously update the learning system to be in line with the development of educational technology and the demands of the job market. The development of electronic modules in economic sociology not only meets the needs of students and lecturers but is also part of the institution's strategy in improve the quality of education and the accreditation of study programs. Thus, this research has high academic and practical urgency, as the results are expected to serve as a model for developing digital teaching materials aligned with the MBKM paradigm and to support improvements in the quality of economic learning in higher education.

The needs analysis revealed that most students struggled in understand the abstract and conceptual content of Economic Sociology, while the teaching materials currently used were predominantly conventional and offered limited support for independent learning. Although previous studies have demonstrated the effectiveness of e-modules in various disciplines, research focusing on the development of e-modules for Economic Sociology courses in higher education remains limited. This indicates a gap in the availability of digital teaching materials specifically designed to address the learning characteristics of Economic Sociology students.

The novelty of this study lies in the development of an Economic Sociology e-module that integrates contextual socio-economic issues and is designed to support independent learning in higher education. Therefore, this study aims to develop and evaluate the validity, practicality, and effectiveness of an e-module for Economic Sociology learning among students of the Economic Education Study Program.

2. METHOD

The research was carried out at the Economics Education Study Program, Pamulang University. This research was conducted from January to June 2025. The participants in this study included one material expert and one media expert for product validation, three lecturers for the practicality assessment, and 33 students of the Economics Education Study Program at Pamulang University who participated in the implementation and effectiveness testing of the developed e-module. The effectiveness of the developed e-module was

evaluated using a one-group pretest-posttest design. Students were given a pretest before using the Economic Sociology e-module and a posttest after completing the learning activities. The differences between pretest and posttest scores were analyzed using a paired sample t-test to determine the effectiveness of the e-module in improving student learning outcomes. The approach in this study is *Research and Development*, a process for developing or improving a new product or improving an existing product [17]. The ADDIE model is used, consisting of five stages: *Analysis*, *Design*, *Development*, *Implementation, and Evaluation*.

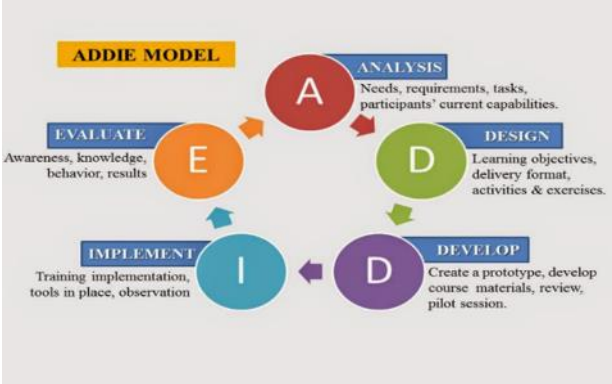

Figure 1. ADDIE Model

The analysis phase involved reviewing the Semester Learning Plan (RPS), existing teaching materials, observations, interviews, and questionnaires administered to lecturers and students. The results indicated that the Economic Sociology course lacked relevant electronic teaching materials, while the existing printed materials were perceived as less engaging and insufficient to support students' understanding of abstract concepts. Consequently, students experienced learning difficulties and reduced motivation during the learning process. The design phase focused on selecting and organizing learning materials aligned with the learning outcomes specified in the RPS, determining appropriate learning strategies, and developing suitable assessment instruments.

The development stage is to prepare a draft of the electronic module of economic sociology learning through the collection of materials, supporting media, and the preparation of layouts, then validated by material experts and media experts to assess suitability, identify weaknesses, and make revisions so that the product becomes more effective and efficient The Implementation Stage applies revised electronic modules to small groups of students and lecturers to assess effectiveness, attractiveness, as well as learning efficiency before being revised into the final product. The Evaluation stage assesses the entire development process and ensures that the Socio-Economic electronic module can improve student competence.

The effectiveness of the electronic module was evaluated using a one-group pretest-posttest design. The test was conducted to determine whether there were differences in students' learning outcomes before and after using the electronic module in the Economic Sociology course. Students were administered a pretest before the electronic module was implemented and a posttest after the learning activities were completed. The module's

effectiveness was determined by comparing pretest and posttest scores. The electronic module was considered effective if posttest scores showed a significant improvement over pretest scores.

The effectiveness test was then implemented through extensive trials with the research subjects, which began with instrument tests to ensure the accuracy and feasibility of the measuring instruments. The effectiveness test was conducted on 33 students of the Economics Education Study Program. Students completed a pretest before using the e-module and a posttest after completing the learning activities.

1. Test Instruments

   Instrument tests are conducted to determine the validity and reliability of the measuring instrument before it is used in the main study, ensuring the instrument accurately and consistently measures the variables being studied [18]. Before the extensive trial of the instrument, a test was conducted to determine whether the instrument was valid.

   Several instruments were employed in this research to collect data at different stages of the development process. An interview guide and observation sheet were used during the needs analysis phase to identify learning problems, student characteristics, and the availability of teaching materials in the Economic Sociology course. A lecturer questionnaire and a student questionnaire were administered to gather information regarding the need for digital teaching materials and students' learning preferences.

   To assess the quality of the developed e-module, material expert validation sheets and media expert validation sheets were used to evaluate the content accuracy, instructional design, presentation, and technical aspects of the product. Student and lecturer response questionnaires were administered during the implementation phase to measure the practicality and user acceptance of the e-module. In addition, a learning outcomes test consisting of pretest and posttest items was used to determine the effectiveness of the e-module in improving students' learning outcomes.

   Prior to implementation, the research instruments underwent validity and reliability testing to ensure they could accurately and consistently measure the intended variables.

   a. Validity Test

      The validity of the developed Economic Sociology e-module was evaluated by one material expert and one media expert. The validation process aimed to assess the suitability of the e-module's content, presentation, language, design, and technical aspects. Data were collected using a validation questionnaire consisting of several assessment indicators rated on a Likert scale. The validity score was calculated using the percentage formula by comparing the total score obtained with the maximum possible score. The resulting percentage was then interpreted against predetermined validity criteria to assess the feasibility of the e-module for implementation in learning activities.

      The validity level of the e-module was determined based on percentage scores. The validity criteria used in this study were as follows: a score of 81%–100% was categorized as very valid, 61%–80% as valid, 41%–60% as fairly valid, 21%–40% as less valid, and 0%–20% as invalid. These criteria were used to evaluate the

feasibility of the developed e-module before its implementation in the learning process.

The practicality of the e-module was assessed by three lecturers and 33 students of the Economics Education Study Program. Data were collected using practical questionnaires designed to evaluate ease of use, clarity of instructions, design attractiveness, and the usefulness of the e-module in supporting learning activities. The practicality score was calculated using a percentage analysis and interpreted in accordance with predetermined practicality criteria.

b. Reliability Test

Table 1. Reliability Test Results

Reliability Statistics	
Alpha Cronbach	N item
.714	20

In Table 1 above, the realism value is 0.714. The Cronbach's Alpha coefficient of the 15 valid items was 0.714, indicating acceptable reliability.

2. Analysis Prerequisites Test

a. Normality Test

Normality tests are used to determine whether the data in the study are normally distributed, so as to select the appropriate statistical analysis [18]. The normality test aims to determine whether the data being studied are normally distributed. The normality test was carried out using the Shapiro-Wilk test. The Shapiro-Wilk test is an effective and valid normality test for small samples. The Shapiro-Wilk test is one of the normality testing methods that has a high level of consistency compared to other methods in determining the distribution of data [19]. Decision-making in the Shapiro-Wilk test is based on the significance value (Sig.), i.e., if the Sig. If the value is > 0.05, then the data are normally distributed; if the Sig. If the value is < 0.05, then the data is not normally distributed. The criterion is that if the significance value is asymp > 0.05, then the data are normally distributed. If the asymp significance value < 0.05, then the data is abnormally distributed [18]. The results of the normality test are shown in the following table. The significance of this asymp can be calculated with the help of the SPSS application.

Table 2. Normality Test Calculation Results

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.089	33	.200*	.969	33	.450
Posttest	.094	33	.200*	.973	33	.553

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on Table 2 above, the significance value is 0.450 > 0.05, so the data are normally distributed.

b. Hypothesis Test

A hypothesis test is a statistical procedure used to determine whether the proposed hypothesis can be accepted or rejected based on data obtained from research [20]. Hypothesis testing is used to make decisions about the null hypothesis (H0) based on the comparative significance values or the test statistic [21]. Based on the results of the prerequisite test analysis, the data were found to be normally distributed and homogeneously distributed. Furthermore, to test the effectiveness of the electronic learning module on economic sociology, a paired-samples t-test was conducted using SPSS 26.

This hypothesis test has the following criteria: (a) If the significance value (Sig.) is greater than or equal to 0.05 (Sig. ≥ 0.05), then the teaching material is ineffective; and (b) If the significance value (Sig.) is less than or equal to 0.05 (Sig. ≤ 0.05), then the teaching material is effective. The results of the hypothesis test are shown in the following table.

Table 3. Hypothesis Test Results

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Nilai	Equal variances assumed	.102	.750	-5.452	64	.000	-7.121	1.306	-9.731	-4.512
	Equal variances not assumed			-5.452	63.998	.000	-7.121	1.306	-9.731	-4.512

Based on the paired sample t-test results presented in Table 3, the significance value (Sig. 2-tailed) was 0.000, which is lower than 0.05. Therefore, the developed Economic Sociology e-module was considered effective in improving student learning outcomes. It is known that the Sig (2-tailed) value is 0.00 < 0.05, so it can be concluded that the accepted hypothesis is that the Electronic Module of Economic Sociology Learning is effective as teaching materials used in the Economics Education Study Program. This indicates that the use of electronic modules has a positive impact on student learning outcomes. These findings support Bates's (2015) view that learning technology can enrich the learning experience through greater interactivity, flexibility, and ease of access.

The data were analyzed using descriptive and inferential statistics. The validity and practicality of the e-module were analyzed using percentage scores. Instrument reliability was assessed using Cronbach's Alpha coefficient. Prior to hypothesis testing, data normality was examined using the Shapiro–Wilk test. The effectiveness of the e-module was evaluated using a paired sample t-test to compare students' pretest and posttest scores. Statistical analyses were conducted using SPSS version 26.

3. RESULTS AND DISCUSSION

The results of this study indicate that the Economic Sociology e-module developed using the ADDIE model is valid, practical, and effective for use in higher education learning.

3.1. E-Module Validity

Table 4. Module Validity

Validator	Percentage	Category
Material Expert	91%	Very Valid
Media Expert	90%	Very Valid

The validation results showed that the Economic Sociology e-module received scores of 91% from the material expert and 90% from the media expert. These results indicate that the developed e-module is categorized as very valid and suitable for implementation in learning activities.

3.2. E-Module Practicality

Table 5. E-Module Practicality

Respondent	Percentage	Category
Lecturers	89%	Very Practical
Students	86%	Very Practical

The practicality assessment indicated that the e-module was categorized as very practical, with lecturer responses reaching 89% and student responses reaching 86%.

3.3. E-Module Effectiveness

a. Reliability Test

The reliability test was conducted using Cronbach's Alpha coefficient. The results showed that the Cronbach's Alpha coefficient of the 15 valid items was 0.714, indicating acceptable reliability. Therefore, the instrument was considered reliable for use in this study.

b. Normality Test

The normality test was conducted using the Shapiro–Wilk test. The results showed a significance value of 0.450, which was greater than 0.05. Therefore, the data were normally distributed and met the assumptions for parametric statistical analysis.

Table 6. Descriptive Statistics of Learning Outcomes

Variable	N	Mean
Pretest	33	75.33
Posttest	33	88.42

The descriptive analysis showed that the mean pretest score was 75.33, while the mean posttest score increased to 88.42 after the Economic Sociology e-module was implemented.

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c. Paired Sample t-Test

Table 7. Pared Sample t-test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	75.33	33	4.449	.774
	Posttest	88.42	33	3.455	.601

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pretest & Posttest	33	.985	.000

Paired Samples Test

		Paired Differences			
					95% Confidence ...
		Mean	Std. Deviation	Std. Error Mean	Lower
Pair 1	Pretest - Posttest	-13.091	1.208	.210	-13.519

Paired Samples Test

		Paired Differences			
		95% Confidence ...			
		Upper	t	df	Sig. (2-tailed)
Pair 1	Pretest - Posttest	-12.662	-62.232	32	.000

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The results of the paired sample t-test revealed a significance value (Sig. 2-tailed) of 0.000, which was lower than 0.05. Therefore, there was a significant difference between the pretest and posttest scores. These findings indicate that the Economic Sociology e-module was effective in improving student learning outcomes.

3.4. Discussion

These findings suggest that the developed e-module can serve as an effective digital teaching material to support Economic Sociology learning in higher education. However, further studies with larger, more diverse samples are recommended to enhance the generalizability of the findings. Detailed descriptive statistics were limited to mean scores because the original dataset was no longer available for further calculation.

These findings show that most instruments have met the measurement feasibility criteria, enabling them to represent students' understanding of socio-economic material accurately. Valid instruments are an important prerequisite in development research, especially to assess the impact of using technology-based teaching materials.

After the validity test, the research instrument is tested for reliability. The reliability test aims to determine the level of consistency of a measuring instrument in producing stable data when used repeatedly under the same conditions. Reliable instruments will provide relatively fixed results so that they can be trusted in collecting research data [23].

The effectiveness of this electronic module shows that the use of technology-based teaching materials can positively impact concept understanding and improve student learning outcomes. From the perspective of connectivism theory, the effectiveness of this electronic module can be understood as the success of the teaching materials in facilitating students' knowledge networks by connecting content, digital media, and learning experiences [24].

1
1

The use of electronic modules in higher education has proven effective in improving the quality of learning and student learning outcomes. Electronic modules provide flexible

interactivity and support independent and collaborative learning [25]. Electronic modules not only function as static sources of information but also as learning nodes that allow students to access, process, and associate information from various sources independently and continuously. Furthermore, the application of the ADDIE development model in this study has been proven to be able to produce electronic modules that are in accordance with the characteristics of students and socio-economic learning outcomes. With valid and reliable instruments, the results of this study provide a strong empirical picture of the effectiveness of electronic modules in learning. This success also supports the transformation of learning in higher education towards adaptive, collaborative, and student-centered digital learning, as mandated in the Independent Learning Independent Campus (MBKM) policy and the demands of 21st-century learning.

Although research on the development of electronic modules for learning socioeconomics has shown positive results in terms of practicality and effectiveness, this research still has some limitations that need to be noted. The first limitation lies in the scope of the research subject, which remains limited to students in the economics education study program at one university. This condition has implications for the generalizability of research results to contexts with different student characteristics, technological facilities, and academic policies.

The second limitation relates to the relatively short duration of the implementation of electronic modules. Product trials are carried out in a certain lecture time span so that the long-term impact of the use of electronic modules on the formation of critical thinking skills, digital literacy, and student readiness to face the world of work cannot be comprehensively observed. Therefore, the effectiveness results obtained are more representative of the short-term impact on students' cognitive learning outcomes.

In addition, this study still focuses on measuring effectiveness on cognitive aspects through learning outcome test instruments. Affective and psychomotor aspects, such as social attitudes, economic moral values, and collaborative skills that characterize economic sociology learning, have not been measured in depth. This limitation opens up opportunities for further research to examine the more holistic dimension of learning.

The results of this study have positive implications for students, especially in improving the quality of the learning experience. Electronic modules allow students to learn more independently, flexibly, and contextually through access to a variety of integrated digital resources. In the perspective of connectivism theory, students are encouraged to actively build knowledge networks by connecting theoretical concepts of economic sociology with real socio-economic phenomena. However, the success of using electronic modules depends heavily on students' readiness to manage independent learning and on their adequate digital literacy.

The electronic module encourages students to develop critical and analytical thinking skills through case studies and social reality-based exercises. This implication is in line with the demands of 21st century learning that places students as lifelong learners. However, students who are not used to technology-based independent learning need initial assistance so as not to experience obstacles in the adaptation process.

This research provides implications for lecturers on changing roles in the learning process. Lecturers no longer play the role of the only source of knowledge, but rather as facilitators, mediators, and managers of the digital learning ecosystem. The developed electronic modules can be an alternative teaching material that supports project-based learning, discussion, and independent exploration in accordance with MBKM policies.

The implications of the results of this study for universities are that they provide strategic implications in the development of digital learning policies and the implementation of MBKM. The development of electronic modules can be used as a model or reference in the development of digital teaching materials in other courses, especially those that are conceptual and contextual. This supports the transformation of learning towards a higher education system that is more adaptive to technological developments and the needs of the world of work.

Universities need to prepare adequate infrastructure, policy, and mentoring support so that the implementation of electronic teaching materials can run sustainably. Investment in learning management systems, lecturer training, and strengthening the digital learning culture is important to ensure that the development of innovative teaching materials is not partial but integrated into the academic system as a whole.

This research makes a theoretical and practical contribution to the development of electronic teaching materials with a connectivism approach. Although it still has limitations, this study's results show that electronic modules can serve as a bridge between economic sociology theory and social reality through contextual, collaborative, and adaptive digital learning. Therefore, this research can serve as a starting point for developing sustainable, innovative learning models in higher education.

The improvement in learning outcomes may be attributed to the e-module's interactive features, including contextual examples, self-paced learning opportunities, and integrated evaluation activities. These features enabled students to revisit learning materials independently and connect theoretical concepts with real socio-economic phenomena.

Limitations

This study has several limitations that should be considered when interpreting the findings. First, the study involved a relatively small sample consisting of 33 students from the Economics Education Study Program at Pamulang University, which may limit the generalizability of the results to other educational contexts and institutions. Second, the implementation of the Economic Sociology e-module was conducted over a relatively short period, making it difficult to assess its long-term impact on student learning outcomes. Third, the effectiveness evaluation focused solely on cognitive learning outcomes as measured through pretest and posttest scores.

4. CONCLUSION

The results of this study indicate that the Economic Sociology e-module developed using the ADDIE model is valid, practical, and effective for use in higher education learning. The validation results showed that the e-module was categorized as very valid, with assessments from material experts (91%) and media experts (90%) indicating high validity.

The practicality assessment also demonstrated that the e-module was very practical according to lecturer responses (89%) and student responses (86%). In addition, the effectiveness test using a paired sample t-test revealed a significant difference between pretest and posttest scores ($p = 0.000 < 0.05$), with the mean score increasing from 75.33 to 88.42. These findings suggest that the developed e-module can serve as an effective digital teaching material to support Economic Sociology learning in higher education. However, further studies with larger, more diverse samples are recommended to enhance the generalizability of the findings.

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