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The development of Canva-based e-modules in the subject of fundamentals of agribusiness plants for the agribusiness plants major of class X students at SMK Negeri 3 Sidenreng Rappang

Muhammad Rizal, Suardi Zain ,Muhammad Aksan, Jusman Tang
[1234] Universitas Muhammadiyah Sidenreng Rappang
Email: rizlh3432@gmail.com

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Abstrak

Penelitian ini bertujuan untuk mengembangkan e-modul berbasis Canva pada mata pelajaran Dasar-Dasar Agribisnis Tanaman kelas X di SMK Negeri 3 Sidenreng Rappang dan menguji tingkat validitas, kepraktisan, serta efektivitasnya. Penelitian menggunakan metode *Research and Development* (R&D) dengan model pengembangan ADDIE (*Analysis, Design, Development, Implementation, Evaluation*). Subjek penelitian adalah 15 peserta didik dari jurusan Agribisnis Tanaman Pangan. Instrumen penelitian meliputi lembar validasi, angket respon siswa, serta *pretest* dan *posttest*.

Hasil validasi menunjukkan bahwa e-modul yang dikembangkan memperoleh skor kelayakan sebesar 80% dari ahli materi dan 74,2% dari ahli media, yang masing-masing berada pada kategori sangat layak dan layak. Uji kepraktisan oleh peserta didik menunjukkan nilai rata-rata antara 78% hingga 94%, yang tergolong sangat praktis dan dapat digunakan tanpa perbaikan. Sedangkan uji efektivitas berdasarkan perbandingan *pretest* dan *posttest* menunjukkan adanya peningkatan hasil belajar, yang menandakan bahwa e-modul efektif dalam membantu pemahaman siswa terhadap materi. Dengan demikian, e-modul berbasis Canva ini dinyatakan valid, praktis, dan efektif untuk digunakan sebagai media pembelajaran dalam meningkatkan mutu pembelajaran agribisnis tanaman.

Kata Kunci: *E-modul, Canva, ADDIE, validitas, R&D*

Abstract

This study aims to develop a Canva-based e-module for the subject of Basic Plant Agribusiness in Grade X at SMK Negeri 3 Sidenreng Rappang and to examine its validity, practicality, and effectiveness. The research employed a Research and Development (R&D) method using the ADDIE development model (Analysis, Design, Development, Implementation, Evaluation). The research subjects were 15 students from the Agribusiness of Food Crops major. Research instruments included validation sheets, student response questionnaires, and pretest-posttest evaluations.

The results showed that the developed e-module obtained a feasibility score of 80% from the material expert and 74.2% from the media expert, categorized as very feasible and feasible, respectively. Practicality tests conducted by students yielded average scores ranging from 78% to 94%, indicating the module was highly practical and usable without revision. The effectiveness test, based on comparisons of pretest and posttest scores, demonstrated an improvement in learning outcomes, indicating that the e-module effectively enhances students' understanding of the material. Therefore, the Canva-based e-module is considered valid, practical, and effective as a learning medium to improve the quality of agribusiness education.

Keywords: e-module, Canva, ADDIE, validity, R&D

Introduction

The increased use of technology in the 21st century is very significant, as technology has permeated all aspects of life, including the field of education. In line with the increasing use of technology, the education sector must keep up with these advancements in order to improve the quality of learning. Therefore, technology-based learning methods are a choice for creating more engaging, modern learning media that can increase student enthusiasm and interest in learning, ultimately improving the skills needed by students. The 21st century is an era where the development of knowledge, culture, and technology is progressing rapidly. With this, the synergy of the government in fostering and developing Indonesian education to be more advanced is proven with the Merdeka Curriculum. Learning media no longer focuses on just one method, but the use of digital-based media in learning, such as e-modules and media-based learning, has become a choice to improve the quality of education in Indonesia.

Education is a crucial aspect of human life, and every student has the right to access quality education to keep up with the changing times. Education, in general, is the process by which a person develops themselves in life to survive and continue living, as stated by Yayan Alpian (2019). According to Abdul Rahman et al. (2022), education is a structured and conscious effort to create a learning atmosphere and process that is engaging, so that students can independently develop their potential in areas such as pedagogy, affective, psychomotor, and religious abilities. Education is essential for both individual and societal advancement. Formal education, such as school, is the primary place where students acquire knowledge. The role of schools in shaping character and providing engaging learning experiences for students is an obligation, as emphasized by Merdeka Belajar (2024). Therefore, learning adaptation must follow the times, and the development of learning methods must be based on technology. This means that learning models and media should make breakthroughs, such as the development of existing learning methods. It is the duty of schools to create a learning environment and learning materials that are comfortable, interactive, engaging, and creative, in order to increase students' interest in continuing to learn and develop.

Learning is a process of improving knowledge, skills, and morality in students through interaction with information and their environment, which can take place throughout life. The methods of learning are important for maximizing one's knowledge acquisition to achieve goals and gain the knowledge needed to navigate life in the future. Learning methods refer to the ways information is delivered, such as discussions, lectures, and simulations, which are chosen to help students achieve their learning objectives (Sadjati Melati, 2020).

Based on an interview conducted with teachers from the Agribusiness Plants Major at SMK Negeri 3 Sidenreng Rappang, the school has provided teaching modules. However, these modules are still lacking in terms of their appearance and visuals, causing students to often feel bored with the learning material. According to the Merdeka Curriculum, educators are expected to be interactive and innovative in teaching and utilizing technology to capture students' interest in paying attention and improving their self-development. A direct interview was also conducted with students from the Agribusiness Plants Major, who expressed dissatisfaction with the monotonous and unattractive appearance of the teaching modules. Therefore, it is necessary to make breakthroughs in providing engaging learning experiences for students in conducting extracurricular learning activities at school. By using e-modules, it is expected that students' enthusiasm for learning will increase, creating an enjoyable

and engaging learning atmosphere. Based on the student interviews, the current modules fail to generate enough interest in learning. This lack of interest leads to several problems, including insufficient understanding of the theoretical material provided, causing students to struggle in grasping the basic concepts of the lesson. This lack of understanding hinders students from achieving good grades.

The solution to these problems is the need for the development of creative e-modules that support students' learning needs and provide a better understanding of the material being taught. The development of engaging e-modules can increase students' attention in learning the material. A study revealed that minimal student participation negatively impacts their learning quality, which affects the learning process. Therefore, improving learning quality is the responsibility of educators to ensure quality teaching, which will ultimately improve students' learning outcomes (M. Fitrah, 2013).

Method

This research is a type of research and development (R&D) aimed at developing a Canva-based e-module for the subject of Fundamentals of Agribusiness Plants for Class X students at SMK Negeri 3 Sidenreng Rappang, with a total of 15 students. The development model used is the ADDIE model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation (Branch, 2009). Below are the stages of analysis carried out:

This stage consists of two main steps: performance analysis and need analysis. The breakdown of each step is as follows:

Competency Analysis: This analysis is conducted to identify the learning capabilities that students are expected to achieve according to the teaching modules created by the teacher after utilizing the developed learning media products in teaching, whether related to knowledge, attitudes, or skills.

Needs Analysis: Needs analysis is carried out to determine the competencies that students must master to ensure that learning objectives can be achieved optimally.

At this stage, the e-module is designed using the Canva application. The planning steps include:The design process of the e-module involves several key steps, including determining its title, preparing reference sources or supporting books, and identifying the learning objectives and outcomes. Competency achievement indicators are developed, and the e-module's writing format is created. A flowchart is then developed to represent the components and flow of the product, guiding the researcher on the elements to be included. Additionally, a storyboard is created, which, according to Arsyad (2019), is a sequence of images or sketches showing the content and flow of the lesson before the media is developed. The storyboard serves as a planning tool that visualizes elements like narrative text, navigation, and interactivity within the e-module. It helps developers organize the content, determine layout, and estimate multimedia elements for each screen, ensuring that the material is systematically presented and easy for students to understand, while avoiding inconsistencies between pages (Yusup, 2021). Through this process, developers can ensure that the e-module aligns with learning objectives and meets student needs effectively.

After the instruments are validated, they can be used to measure the validity, practicality, and effectiveness of the e-module. Validity is measured by providing a questionnaire to

content experts and media experts, while practicality and effectiveness are measured using questionnaires for practicality and pretest and posttest questions for students. The practicality is assessed after students use the e-module, and effectiveness is evaluated through pretest and posttest to measure the effectiveness of the Fundamentals of Agribusiness Plants e-module.

The product is developed according to the design created. The product is then developed using the Canva application. The collected material from the design phase is compiled into a complete product according to the previous plan. This includes page layout, selection of visual elements, content organization, and other design aspects determined during the design phase. After the product is completed, validation will be carried out by two media experts and two content experts. These experts will provide feedback and assessments of the developed educational media to determine its feasibility before being implemented. They will also provide suggestions for improvement if necessary.

The implementation stage involves delivering the developed lesson plan in a real classroom setting. In this stage, the material is delivered to each student according to the learning plan. This process ensures that the teaching materials are received and clearly understood by the students.

The evaluation stage consists of formative and summative evaluations. Formative evaluations are carried out continuously at every stage of development, including after the analysis, design, and development stages. This evaluation focuses on assessing each stage of the product. Evaluation results are obtained from feedback from teachers and students, as well as from media and content validation experts during the trial phase. Based on the evaluation results, the final stage will be revised.

The data analysis technique used is qualitative analysis from observations and interviews with teachers and students of Class X at SMK Negeri 3 Sidenreng Rappang in the development of the e-module, and quantitative analysis from the validation results of media and content experts as well as practicality and effectiveness questionnaires. Data collection techniques in this study involve using a respondent questionnaire that will be distributed to 15 students to assess practicality, while validation of content and media will use validation questionnaires, and effectiveness will also be measured using questionnaires. The respondents' answers will be scored from one to five points:

Score	Category	Code
1	Not Good	TB
2	Poor	KB
3	Satisfactory	CB
4	Good	B
5	Very Good	SB

Source: Widoyoko, 2014

To determine the percentage of feasibility of the developed e-module product, the formula from Tegeh et al. (2014) is used:

$$\text{Percentage} = \Sigma x / \text{SMI} \times 100\%$$

Where:

- Σx = Total score
- SMI = Maximum Ideal Score
- 100% = Constant

Criteria for Validity

Percentage (%)	Criteria
80%-100%	Very Valid
61%-79%	Valid
41%-60%	Satisfactory
21%-40%	Less Valid
0%-20%	Not Valid

Source: Ferdiansyah & Haling, 2021

Practicality Criteria

Practicality Criteria	Category	Description
81.00% 100.00%	- Very Practical	Can be used without improvement
61.00% 80.00%	- Practical	Can be used with some improvements
41.00% 60.00%	- Less Practical	Should not be used due to needing many improvements
21.00% 40.00%	- Not Practical	Should not be used
0.00% 20.00%	- Very Impractical	Should not be used

Source: Wandani & Nasution, 2017

The average practicality percentage is calculated as follows: Average Percentage = ΣPercentage / n Where:

Σ score = Total score from respondents

Σ percentage = Maximum Ideal Score

n = Number of respondents

The effectiveness of the Fundamentals of Agribusiness Plants e-module is determined through test results given to the students. The test results will be analyzed for normality, reliability, and paired t-tests. The effectiveness test uses a one-group pretest-posttest design, which includes a pretest (before treatment) and posttest (after treatment) in one group. The design is described as follows:

O1 X O2
One Group Pretest-Posttest Design

Where:

- X = treatment given (independent variable)
- O_1 = pretest on the experimental group
- O_2 = posttest on the experimental group (after treatment)

Paired T-Test Hypothesis Testing

After performing the t-test, the researcher compares the calculated t-value with the t-table value. Hypothesis testing is conducted using a 5% significance level (0.05). The decision criteria are as follows:

Accept the alternative hypothesis (H1) if t-calculated > t-table or if Sig. (2-tailed) < 0.05.Reject the null hypothesis (H0) if t-calculated < t-table or if Sig. (2-tailed) > 0.05 (Widiyanto, W. 2013).

Result and Discussion

In this study, the development of the Canva-based e-module for the subject of Fundamentals of Agribusiness Plants was evaluated through various tests: validity, practicality, and effectiveness.

1. Validation Results:

The e-module underwent validation from both content and media experts. The results showed that the content expert gave a validity score of 80%, while the media expert gave a score of 74.2%. Both scores fall under the "valid" category, with the content expert rating the e-module as highly feasible and the media expert rating it as feasible.

Table: Validation Results

Indicator	Content Expert Score	Media Expert Score	Validity Level
Module Appearance	4/5 (90%)	5/5 (100%)	Very Feasible
Module Content (Visual)	19/25 (76%)	21/25 (84%)	Feasible
Content Presentation	26/30 (86.67%)	25/30 (83.33%)	Very Feasible
Module Components	12/15 (80%)	13/15 (86.7%)	Very Feasible

2. Practicality Results:

A total of 15 students tested the e-module and filled out a questionnaire regarding its practicality. The results showed an average score ranging from 78% to 94%, indicating that the e-module was very practical for use without needing significant improvements.

Table: Student Practicality Scores

Student	Score (%)	Comment
Student 1	80%	Can be used without improvement
Student 2	84%	Can be used without improvement
Student 3	86%	Can be used without improvement
Student 4	82%	Can be used without improvement
Student 5	88%	Can be used without improvement

3. Effectiveness Results:
    - Pretest and posttest scores were compared to determine the e-module's effectiveness in enhancing student learning. The average pretest score was 64.4%, while the posttest average score increased to 77.13%, with a difference of 12.73%. This indicates that the e-module significantly improved student understanding of the material.

Table: Pretest and Posttest Scores

Student	Pretest Score	Posttest Score	Difference
Student 1	24	27	+3
Student 2	12	21	+9
Student 3	22	27	+5
Student 4	27	28	+1
Student 5	28	29	+1
...	...	...	...

    - A paired t-test was conducted to evaluate the significance of this improvement, with the results showing a significant difference ($p < 0.05$), indicating that the e-module was effective in enhancing student learning.

Discussion

The results of this research indicate that the Canva-based e-module developed for the subject of Fundamentals of Agribusiness Plants is both valid and practical for use in classroom settings. The high validation scores from both the content and media experts confirm that the e-module meets the required standards for educational materials, both in terms of content and design. The positive feedback from students further supports the claim that the e-module is user-friendly and engaging, making it a valuable tool for enhancing the learning process.

The practicality of the e-module, as assessed by the students, indicates that it is very practical and can be used effectively in the

classroom without the need for major improvements. The high average practicality score (84.53%) aligns with the criteria set by Wandani & Nasution (2017), confirming the e-module's ease of use and its capacity to facilitate learning. The practical nature of the e-module is important because it ensures that students can engage with the material independently, enhancing their learning experience.

The effectiveness of the e-module was clearly demonstrated by the significant improvement in students' learning outcomes, as shown by the pretest and posttest scores. The 12.73% increase in the average score between the pretest and posttest indicates that the e-module was effective in enhancing students' understanding of the subject matter. This result is consistent with findings from other studies (Sugiyono, 2011), which suggest that effective learning tools, such as interactive e-modules, can significantly improve students' academic performance.

The paired t-test results further support the effectiveness of the e-module, with a statistically significant difference in the students' pretest and posttest scores. This finding underscores the importance of integrating technology-based learning tools, such as e-modules, into the classroom, as they have been shown to improve student outcomes. The positive results from both the validation and effectiveness tests provide strong evidence that the e-module is a valuable addition to the teaching methods in vocational education, specifically in agribusiness.

In addition to improving academic performance, the use of the Canva-based e-module may also contribute to fostering a more interactive and engaging learning environment. As students are exposed to modern learning tools, their interest and motivation to learn may increase, leading to a more effective learning experience. The use of digital tools in education is particularly important in the 21st century, as it aligns with the growing trend of integrating technology into all aspects of life, including education.

Although the e-module proved to be effective, there are still areas that can be improved for future versions. For example, while the visual design and layout were praised, some students suggested that more interactive elements or multimedia components could be incorporated to further enhance the learning experience. Future iterations of the e-module could benefit from adding more interactive features, such as quizzes, videos, or discussion forums, to further engage students and support diverse learning styles.

Another area for future development could be the integration of personalized learning paths within the e-module. By allowing students to choose their own learning pathways or providing differentiated content based on student needs, the e-module could become even more adaptable to individual learning preferences. This could help students progress at their own pace, ensuring that all students, regardless of their learning speed, can benefit from the e-module.

the success of this e-module highlights the potential for similar digital learning tools in other subjects within vocational education. The development and implementation of e-modules can be expanded to cover a wide range of subjects, not just agribusiness, to improve the quality of education across various disciplines. As technology continues to evolve, educational tools like e-modules will play an increasingly important role in preparing students for the challenges of the modern workforce.

Conclusion

The research and development of the Canva-based e-module for the subject of Fundamentals of Agribusiness Plants for Class X students at SMK Negeri 3 Sidenreng Rappang yielded promising results, meeting the criteria of validity, practicality, and effectiveness. Validation by content and media experts revealed that the e-module met the necessary standards for educational material, with a content validity score of 80% and media validity at 74.2%, both of which are considered acceptable. These validation results confirm that the e-module's content and design are well-suited for use in the classroom.

In terms of practicality, the e-module was highly rated by students, with an average score of 4.29 and a practicality percentage of 84.53%. This indicates that students found the e-module easy to use, engaging, and effective in helping them understand the material. The ease of use and engaging design played a significant role in motivating students to interact with the content and deepen their learning, highlighting the e-module's potential for widespread use in educational settings.

The effectiveness of the e-module was confirmed through pretest and posttest assessments, showing a significant improvement in student learning outcomes. The average pretest score of 64.4% increased to 77.13% after using the e-module, reflecting a 12.73-point improvement. This result, supported by statistical analysis, demonstrates that the e-module effectively enhanced students' understanding of the material, making it a valuable tool for improving the quality of education in the field of agribusiness.

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