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Development of Learning Module Flipbook with STEAM Approach in Philosophy Course Education

Firdiawan Ekaputra*, Fuldiaratman, & Wilda Syahri

Universitas Jambi, Jambi – Muara Bulian KM. 15 Street, Jambi 36361, Indonesia

Abstract

The purpose of this study was to develop a learning module flipbook with a STEAM approach in the philosophy of education course. The method used in this research is the Research and Development method. The development model used in this study, namely the ADDIE model which consists of 5 stages including analysis, design, development, implementation, and evaluation. Learning module flipbook media products with the STEAM approach that have been developed are then assessed by media experts and material experts to determine the validity of the media that has been developed. After the developed media is declared feasible to be carried out to the next stage, the feasibility test stage is carried out by students. The subjects used in the product feasibility test in this study were 5 students of the Jambi University Chemistry Education Study Program who had taken the philosophy of education course in the product feasibility test. Based on the results of the product feasibility test assessment, the learning module flipbook with the STEAM approach in the philosophy of education course obtained a score of 90.71 with very good criteria.

Keywords: flipbook, module, STEAM.

1. Introduction

Technological advances make learning resources very varied and practical to carry and use. The efforts of the world of education to integrate technology in learning are a form of adaptation to the times (Sungkono & Ekaputra, 2023). One of the efforts to keep up with the times is the use of digital-based learning media. The presence of technology in the world of education makes the delivery of lecture material all digital (Ekaputra, 2023).

The use of digital-based learning media can facilitate the learning process, be more interesting, practical in carrying and using it, and can improve understanding of material, motivation, learning activities, learning achievement. The use of learning media can make students' learning achievement increase (Ekaputra, 2020). One of the interesting learning media to be applied in learning is flipbook.

Flipbook is a learning media that can be used to help students better understand what is being taught (Fuldiaratman et al., 2024). Flipbook applications can combine several learning media such as audio, video, and writing, so that they attract attention and motivate students to learn (Arisandhi et al., 2023). The advantages possessed in the flipbook application make this media necessary to be applied to improve the quality of learning carried out. The use of flipbook media allows students to actively participate in learning and can make concepts that are difficult to understand easier to understand (Ekaputra et al., 2024).

Based on observations in the field, it shows that material sources and learning media are limited. The utilization of interesting learning media, especially based on fun gamification, has a positive impact on learning outcomes (Ekaputra, 2024)). Based on this opinion and conditions in the field, learning resources that do not vary make the quality of learning low. Learning modules in the form of attractive flipbooks are not yet available in the philosophy of education course. Learning assisted by the application of interesting flipbook media because it integrates various types of learning media can improve reading literacy skills (Mirnawati & Fabriya, 2022).

The STEAM approach in the philosophy of education course is still rarely applied in activities. The application of the STEAM approach in learning can facilitate various learning needs, improve the learning process, student learning

* Corresponding author.
E-mail address: firdiawan.ekaputra@unja.ac.id

activities, and learning evaluation (Thoma et al., 2023). STEAM is a learning approach that can activate students through projects, so as to develop students' collaboration and problem-solving skills. Project-based learning can improve collaboration skills, critical thinking skills, creativity, and communication that are important for students in the 21st century (Harizon & Ekaputra, 2023). The benefits of the STEAM approach in learning make the STEAM approach need to be integrated in the learning media developed. Therefore, in this study, the development of a learning module flipbook with a STEAM approach in the philosophy of education course was carried out.

2. Literature Review

2.1. Flipbook

Flipbook is an electronic book that can combine text, images, sound, video, animation, navigation, and help users interact with others and be fun (Utami et al., 2022). The advantages of the flipbook application not only combine elements of writing, but can include elements of animation, video, sound in one learning media (Virdarani et al., 2023). The use of flipbook media allows students to actively participate in learning and can make concepts that are difficult to understand easier to understand (Ekaputra et al., 2024).

2.2. STEAM

STEAM-based learning is learning that combines science, technology, engineering, art, and math (Darmadi et al., 2022). STEAM-based learning is considered an important component that is appropriate to be applied in learning to prepare a generation that has literacy and competitiveness in the fields of science and technology (Shenita et al., 2022). The application of the STEAM approach can make students experience an increase in creativity, critical thinking and innovation (Mariana et al., 2023).

3. Research Methods

This type of research is a Research and Development research. The development model used in this study, namely the ADDIE model which consists of 5 stages including analysis, design, development, implementation, and evaluation. Learning module flipbook media products with the STEAM approach that have been developed are then assessed by media experts and material experts to determine the validity of the media that has been developed. After the developed media is declared feasible to be carried out to the next stage, the feasibility test stage is carried out by students. The subjects used in the product feasibility test in this study were 5 students of the Jambi University Chemistry Education Study Program who had taken the philosophy of education course in the product feasibility test.

The data collection technique used in this study is a questionnaire to obtain information about the quality of the learning module flipbook media with the STEAM approach that has been developed. The data analysis techniques used in this study are qualitative and quantitative. Qualitative and quantitative data obtained from validation and input by experts which aims to determine the feasibility of media flipbook learning modules with the STEAM approach. After the learning module flipbook media with the STEAM approach is declared valid by the expert, then the product feasibility test is carried out to obtain quantitative data. The product feasibility test was conducted on 5 students who had taken the philosophy of education course and field tests on students who were taking the philosophy of education course. The product feasibility test was conducted to assess the feasibility of the learning module flipbook media with the STEAM approach. The results of the media assessment of the learning module flipbook with the STEAM approach are then averaged on a scale of 100 to determine the quality of the media presented in Table 1.

Table 1. Media Assessment Criteria

Criteria Score Range	**Score**
81 -100	Very High
61 - 80	High
41 - 60	Medium
21 - 40	Low
0 - 20	Very Low

4. Results and Discussion

The method used in this research is the Research and Development method to determine the quality of the learning module flipbook with the STEAM approach developed in the philosophy of education course. The development model used in this study, namely the ADDIE model which consists of 5 stages including analysis, design, development, implementation, and evaluation which are explained as follows:

4.1. Analysis

Analysis is the initial stage which aims to find out and analyze the needs and problems in the field, analysis of student learning styles and interests through interview activities, collecting literacy regarding learning modules, flipbooks, STEAM approaches, RPS for philosophy of education courses. Based on observations in the field and the results of interviews conducted with Jambi University Chemistry Education Study Program students who have attended philosophy of education lectures, it shows that the sources of material and learning media in the philosophy of education course are still limited and learning modules in the form of attractive flipbooks are not yet available in the philosophy of education course, so students have difficulty in finding references to philosophy of education chemistry lectures. Based on the problems found in the field, this research was conducted to develop a learning module flipbook with a STEAM approach developed in the philosophy of education course.

4.2. Design

At the design stage begins with designing solutions from the results of the analysis and problems encountered in the field, such as the media and learning models to be used. At the design stage, the design of the material to be included in the module, the STEAM approach to each learning material, the canva application as the basic media for creating and compiling modules, the flipbook builder application developed to create flipbooks, and making storyboards.

4.3. Development

Development of learning media in the form of a learning module flipbook with a STEAM approach in the philosophy of education course. Through the development of flipbook learning media with the STEAM approach, it is expected to improve students' scientific attitudes and collaboration skills. The results of the development of learning media in the form of learning module flipbooks with the STEAM approach in the philosophy of education course are presented in Figure 1.

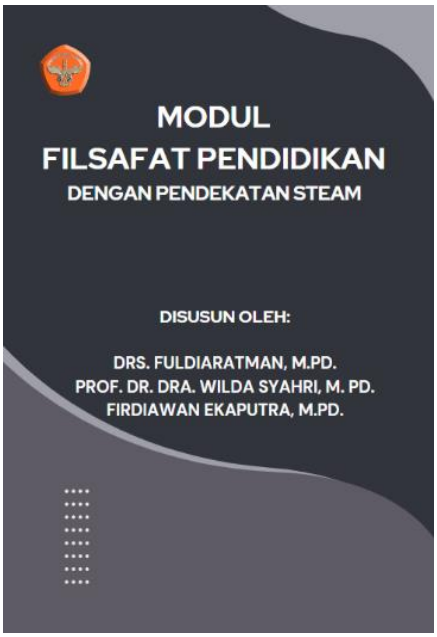

Figure 1. Media Developed

4.4. Implementation

The learning media flipbook learning module with the STEAM approach that has been developed is validated by experts to obtain qualitative and qualitative data. Media assessment by material experts and media experts was carried out twice. This is done to produce learning media flipbook learning module with STEAM approach with good quality material and media operation. After the media flipbook learning module with the STEAM approach is made improvements based on input from media and material experts are considered and declared feasible for research at the next stage, namely small-scale trials. The results of the small-scale trial were carried out on 5 students of the Chemistry Education Study Program at Jambi University who had taken the Philosophy of Education course. This was done to provide input on the learning module flipbook media with the STEAM approach that had been developed. The results of the media feasibility test by small groups are presented in Table 2.

Table 2. Media Assessment Criteria

Indicator	Value
Sharpness of background color	90.00
Consistency of lay out	95.00
Suitability of sentence placement with layout	85.00
Ease of typeface to read	95.00
Suitability of font size with background size	85.00
Suitability of letter color with background color	95.00
Instructions for use in the media	90.00
Mean	90.71

Based on the results of the small group media feasibility test, it was found that the learning module flipbook media with the STEAM approach developed obtained an average of 90.71 which means it obtained very high criteria.

4.5. Evaluate

At the evaluation stage, suggestions are analyzed from the results of the assessment in the validation test, and small scale, and revise the results of the assessment of the developed flipbook media. At the evaluation stage, quantitative data processing is also carried out from the results of the validation and feasibility tests.

Based on the results of the feasibility test, the highest value was obtained in the lay out consistency indicator with a value of 93.33. Students feel that the learning module flipbook media with the STEAM approach developed is an interesting media to use as a learning resource. Consistent lay out makes it easier for students to operate learning media, especially on navigation buttons, because they are familiar. Consistent layouts make students focus on the material content presented in the flipbook media.

Digital flipbook media is learning media in the form of three-dimensional digital books which can contain text, images, and animations, and has an animation feature to open sheets, so that opening a flipbook application is like opening a printed book sheet (Wikanengsih & Rostikawati, 2024). The advantages available in the flipbook application make students very interested in being used in learning activities. Therefore, in this study it can be concluded that the learning module flipbook media with the STEAM approach that has been developed obtained a score of 90.71 with very high criteria. The magnitude of the benefits provided by the learning module flipbook media with the STEAM approach, researchers hope that similar learning media can be developed and applied to learning to improve student attitudes, cognitive abilities and skills.

5. Conclusion

The flipbook application is a learning media that can be integrated with various kinds of learning media such as video, animation, and writing to make students interested in participating in learning. The development of learning module flipbooks with the STEAM approach in the philosophy of education course conducted in this study uses the ADDIE development model which consists of 5 stages including analysis, design, development, implementation, and evaluation. Learning module flipbook media products with the STEAM approach that have been developed are then assessed by media experts and material experts to determine the validity of the media that has been developed and

carried out feasibility tests on 5 students of the Jambi University Chemistry Education Study Program who have taken the philosophy of education course in the product feasibility test. Based on the results of the product feasibility test assessment, the learning module flipbook with the STEAM approach in the philosophy of education course obtained a score of 90.71 with very good criteria. The magnitude of the benefits of flipbook media in learning, it is hoped that similar media can be developed and applied.

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