SciencePlus

E-MODULE DESIGN FOR THE AUDIO VIDEO SYSTEM DESIGN COURSE BASED ON EPUB

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Abstract
This research is motivated by the unavailability of EPUB-based e-modules in the Audio Video System Design course, so that more interesting, interactive, and easily accessible learning media are needed. The purpose of this research is to design and determine the feasibility of EPUB-based interactive e-modules as learning media. The method used is Research and Development (R&D) with the Borg & Gall model simplified to the product revision stage, through design planning with Canva, conversion to EPUB using Convert.io, and the addition of interactive features through Kotobee Author. The validation results show that the e-module obtained a feasibility percentage from media experts with an average score of 85%, and from material experts at 91%, all of which are in the very feasible category. Thus, the developed EPUB-based interactive e-module is declared valid, practical, and suitable for use as a learning medium in the Audio Video System Design course.
Keywords: Interactive e-modules, EPUB, audio video system design, learning media.

INTRODUCTION

Learning media plays a crucial role in ensuring optimal delivery and absorption of knowledge. Learning media are all types of tools and materials used to support the learning process, whether physical, such as books, whiteboards, chalkboards, and visual aids, or technology-based, such as videos, e-books, and learning applications (Nurhidayati et al., 2023) Learning media serves to clarify material, increase interest in learning, and facilitate understanding. Material that is easy to understand and presented in an engaging manner can increase learning interest, such as modules (Najwa Ammara Jauza & Meyniar Albina, 2025)

A module is a relatively short and specific form of teaching material designed to achieve learning objectives, containing material, media, and evaluation forms. Modules, which were previously in book form, have now evolved into electronic formats (e-modules) (Widada & Waluyanti, 2019). E-modules emphasize lower production costs by using electronic formats, making them more practical and timeless. E-modules are teaching materials systematically designed based on a specific curriculum in digital form, consisting of text, images, graphics, animations, and videos that can be accessed anywhere and anytime, similar to EPUB format (Abdul Zahir, 2023)

The EPUB format is a digital book format that has become a standard and replaced Open eBook as the open book format. The EPUB format consists of multimedia files in HTML, XHTML, and XML formats (Harahap, 2020). Although EPUB is an open format, readers still need to download a dedicated reader application to open the module. EPUB-based e-modules can be used as learning media to facilitate the learning process, combining audio and video media in a new or modern way (Arni et al., 2023). The problem in this research is that in the Audio Video System Design course, there is no EPUB-based electronic module. Based on this background, the purpose of this research is to determine the design results and feasibility results of an EPUB-based interactive e-module in the Audio Video System course.

METHODS

The type of research used in this study is quantitative. This study employed the Research and Development (R&D) method with the Borg & Gall research model. The Borg & Gall model is a research model designed to systematically develop and validate educational products through clear stages (Wahyuni, 2020). The flow of this research is as follows.

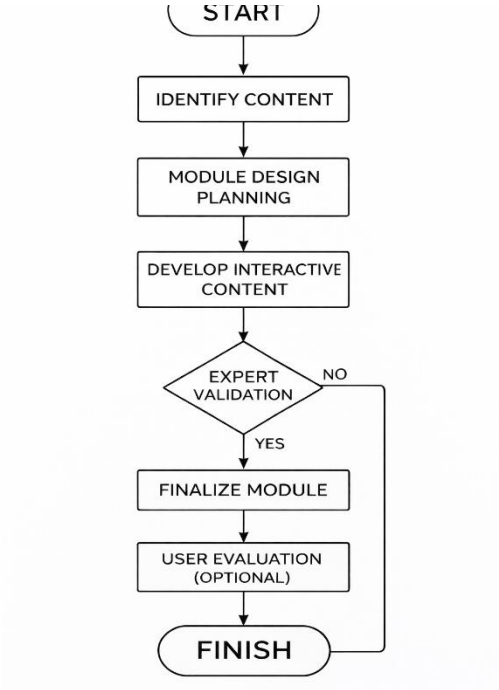

Figure 1. Research Flowchart

The explanation of Figure 1 above is as follows:

1. Material Identification
   In this section, content is sorted, including theories, concepts, and application examples, so that the module truly meets student needs.
2. Module Design
   The next step is module design. The Canva application is used to create page layouts and add illustrations, icons, and supporting graphic elements.
3. Interactive Content Development Stage
   In this stage, development is carried out by adding interactive features through Kotobee Author.
4. Expert Validation
   The validation results serve as the basis for making improvements or revisions so that the module meets the established standards and is suitable for use in learning.
5. Module Finalization
   In this stage, the module is refined based on input from expert validation.
6. User Evaluation (Optional)
   In this stage, the EPUB-based interactive e-module is tested on a limited basis with students as end users.

The validation process in this study involved validation by material experts, media experts, and language experts. To calculate the average score obtained from the validation results, the formula was used (Wira et al., 2021)

$$\bar{x} = \frac{\sum x}{N} \text{.....(1)}$$

Information :

$\bar{x}$ = average expert assessment score

$\sum x$ = the total score obtained from the experts

N = number of validators

After obtaining the average value, the results were then converted back into qualitative data. The average value for each aspect was then converted into a validity level category. The validation formula used to assess the e-module's feasibility in this study is (Rantung et al., 2023)

$$\text{Validity Percentage (\%)} = \frac{Maximum\ Score}{Total\ Scores\ Obtained} \text{ x 100\%.....(2)}$$

After getting the percentage of validity, the results can be categorized based on the following table 1.

Tabel 1. Eligibility Percentage Category (Saputra, 2021)

Percentage (%)	Category
81-100	Very Worthy
61-80	Worthy
41-60	Quite Decent
21-40	Less Worthy
0-20	Not Feasible

RESULTS AND DISCUSSION

1. Result Research

Designing an EPUB-Based Interactive E-Module for the Audio Video System Design Course. This study aims to design an e-module and determine the feasibility of the learning e-module based on validators from media experts and material experts. The researcher created the cover design for the EPUB-based interactive e-module using the Canva application and used several premium elements to create a more attractive design. The results of the e-module design can be seen in Figure 2 below.

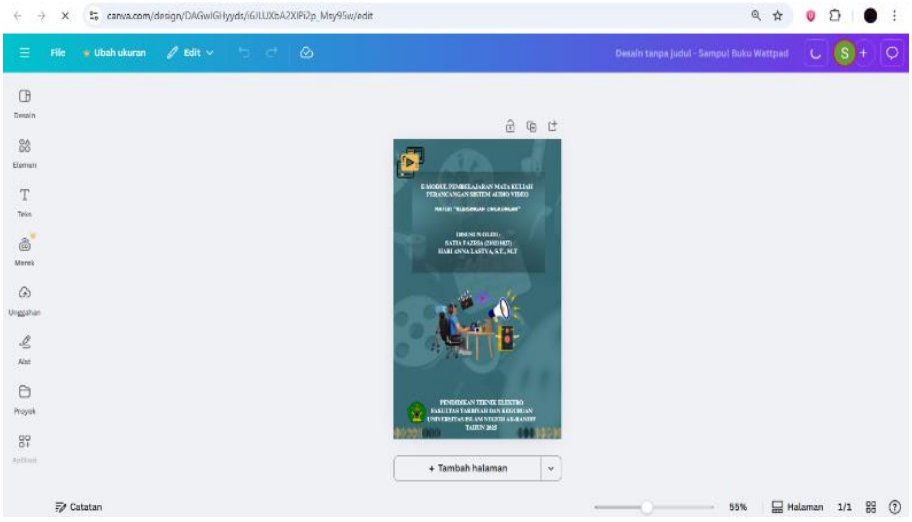

Figure 2. E-Module Cover View

2. Feasibility Results of EPUB-based Interactive E-Modules

In the validation stage, four validators were involved, including two material experts and two media experts from the electrical engineering education study program. This validation was conducted to see the results of the feasibility of the content, format suitability, and visual appearance. Based on the results of the media validation analysis calculated using formula 1, the assessment scores were obtained as follows: media expert 1 gave a score of 77 out of a total of 100 (77%), and media expert 2 gave a score of 92 out of 100 (92%), where media expert 1 fell into the "Feasible" category and media expert 2 fell into the "very feasible" category. Overall, the total score from the two validators was 169 out of a maximum score of 200, so the media feasibility level reached 85%. Referring to Table 3.2 regarding the feasibility criteria, the validated EPUB-based interactive E-Module fell into the "Very Feasible" category for use.

Based on the results of the material validation analysis calculated using formula 3.1, the following assessment scores were obtained: material expert 1 gave a score of 93 out of a total of 100 (93%), and material expert 2 gave a score of 88 out of 100 (88%), where material expert 1 and material expert 2 fell into the “very feasible” category. Overall, the total score from both validators was 181 out of a maximum score of 200, so the material feasibility level reached 91%. Referring to Table 3.2 regarding the feasibility criteria, the validated EPUB-based interactive E-Module fell into the “Very Feasible” category for use. The graph of the results of the media and material feasibility validation can be seen in Figure 3 below.

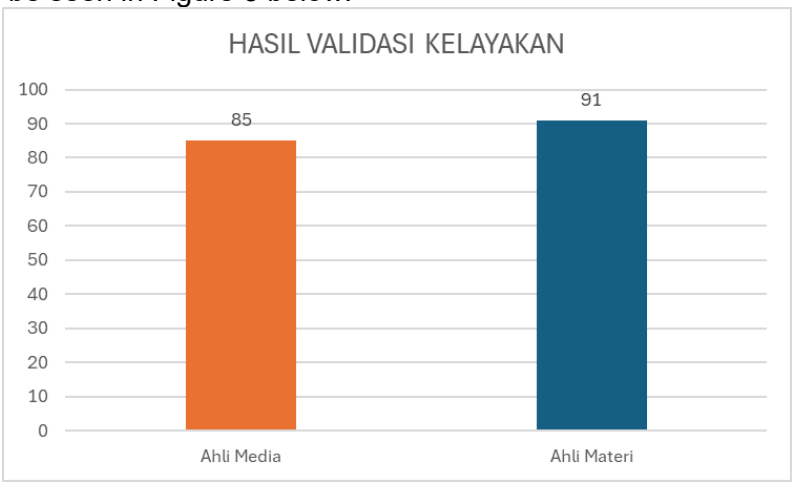

Figure 3. Feasibility Validation Results Graph

CONCLUSION

This research resulted in an interactive EPUB-based e-module designed to support the learning process in the course.

1. The e-module was designed using Canva for visual design, Convert.io for file conversion to EPUB format, and Kotobee Author for interactive features. The material included in the e-module was aligned with the Semester Learning Plan (RPS), specifically the topic of environmental noise. The interactive features included images, audio, video, and interactive quizzes, resulting in an engaging and user-friendly e-module.
2. The feasibility test by media experts showed an average feasibility score of 91%, which falls into the very valid category. This indicates that the module content is appropriate and relevant to learning outcomes, is systematic in its presentation, and facilitates student independent learning. Meanwhile, the media expert validator gave an average feasibility score of 85%, also in the very valid category.

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