E-Module Media Based on Flip Book Maker in the Basic Hair Trimming Course

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A R T I C L E   I N F O

A B S T R A K

Penggunaan metode pembelajaran konvensional, masih kurang optimal dalam menarik minat mahasiswa terhadap materi praktik yang bersifat teknis. E-Module berbasis Flip Book Maker diharapkan dapat menjadi solusi efektif karena mampu menggabungkan unsur multimedia, seperti teks, gambar, video, dan animasi, yang disajikan secara interaktif. Media ini tidak hanya meningkatkan daya tarik dan keterlibatan mahasiswa, tetapi juga memberikan kemudahan akses dan fleksibilitas dalam proses belajar. Tujuan utama dari penelitian ini adalah untuk mengembangkan dan menguji efektivitas media pembelajaran E-Module berbasis Flip Book Maker pada mata kuliah Dasar Pemangkasan Rambut. Jenis penelkitian ini adalah deskriptif kualitatif. Penelitian ini berfokus pada pengembangan E-Module berbasis Flip Book Maker pada mata kuliah Dasar Pemangkasan Rambut dengan menggunakan model Instruksional Development Institute (IDI). Model IDI melibatkan tiga tahap: mendefinisikan, mengembangkan, dan mengevaluasi, memastikan pendekatan sistematis untuk memenuhi kebutuhan pendidikan. Metode analisis data yang digunakan kualitatif deskriptif. Hasil utama dari penelitian ini menunjukkan bahwa penggunaan media E-Module berbasis Flip Book Maker pada mata kuliah Dasar Pemangkasan Rambut secara signifikan meningkatkan kualitas pembelajaran. Berdasarkan uji efektivitas, mahasiswa yang menggunakan E-Module ini menunjukkan pemahaman yang lebih baik terhadap materi dibandingkan dengan metode pembelajaran konvensional. Hasil belajar mahasiswa meningkat, terutama dalam aspek keterampilan teknis dan pemahaman prosedur pemangkasan rambut yang kompleks. Implikasi penelitian ini dapat menjadi alternatif media pembelajaran yang inovatif dan efektif dalam meningkatkan kualitas pendidikan keterampilan.

A B S T R A C T

The use of conventional learning methods is still less than optimal in attracting students' interest in technical practical material. The Flip Book Maker-based e-Module is expected to be an effective solution because it is able to combine multimedia elements, such as text, images, video and animation, which are presented interactively. This media not only increases student attraction and engagement, but also provides easy access and flexibility in the learning process. The main objective of this research is to develop and test the effectiveness of Flip Book Maker-based E-Module learning media in the Basic Hair Trimming course. This type of research is descriptive qualitative. This research focuses on developing a Flip Book Maker-based E-Module for the Basic Hair Trimming course using the Instructional Development Institute (IDI) model. The IDI model involves three stages: define, develop, and evaluate, ensuring a systematic approach to meeting educational needs. The data analysis method used is descriptive qualitative. The main results of this research show that the use of E-Module media based on Flip Book Maker in the Basic Hair Trimming course significantly improves the quality of learning. Based on effectiveness tests, students who use this E-Module show a better understanding of the material compared to conventional learning methods. Student learning outcomes increase, especially in aspects of technical skills and understanding complex hair trimming procedures. The implications of this research can be an innovative and effective alternative learning media in improving the quality of skills education.

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1. INTRODUCTION

Education is the foundation of a nation's efforts to develop reliable human resources. This has the potential to foster critical, rational and imaginative thinking among students, preparing them to face various challenges. This perspective is in line with the view that emphasizes education as the foundation of a nation's future. Continuous improvement in the education system is very important to improve its quality (Abbas et al., 2024; Rojaki, 2023). Vocational education plays an important role in preparing a skilled workforce that is aligned with global industrial demands. The importance of vocational education in meeting society's need for competent workers. In addition, institutions such as Padang State University strive to improve the quality of education through optimizing human resources, infrastructure and innovative teaching strategies (Akbar et al., 2022; Al Faruq et al., 2024; Uduafemhe et al., 2024).

There has been a paradigm shift in society's perception of vocational education, which is now recognized as the main choice (McGrath & Yamada, 2023; Zuurmond et al., 2023). The revitalization of vocational education mandated by the Directorate General of Vocational Education aims to produce human resources who are ready to face the Fourth Industrial Revolution with relevant skills (Bruri Triyono & Hariyanto, 2023; Darmawan et al., 2023; Purwanto et al., 2023). This is in line with Ministry of Education and Culture Regulation Number 9 of 2020 which establishes the organizational structure of the Directorate General of Vocational Education to integrate industry with education. In a practical context such as the Basic Barbering Course, challenges in the learning process influence the quality of students' practical results. The use of conventional teaching media such as PowerPoint, YouTube tutorials, and flip book e-modules is still dominant but less than optimal in meeting effective learning needs. Educators as learning facilitators need to adapt in a more interactive and interesting way. methods and media (Makhroji et al., 2022; Rahmiati et al., 2023).

The development of new teaching media such as flip book-based e-modules is a solution to increase the effectiveness of the Basic Haircutting Course (Makhroji et al., 2022; Suharsono et al., 2023). This media not only facilitates in-depth understanding of concepts but also sharpens students' practical skills. In this context, the development of e-module media is an effort to integrate technology into a learning process that is flexible and easily accessible to students. students (Gunawan et al., 2024; Marlena et al., 2022). Overall, education plays a strategic role in forming human resources who are competent and able to compete in the era of globalization. By continuing to develop an education system that is adaptive and responsive to current developments, it is hoped that future generations will be more competent and globally competitive. The novelty in this research lies in the development and application of Flip Book Maker-based E-Module learning media which has not been widely used in the context of technical skills learning, especially in the Basic Hair Trimming course. This innovation combines interactive and visual elements that are more dynamic compared to conventional learning media, such as textbooks or slide presentations, which are less able to accommodate the needs of practice-based learning. With Flip Book Maker, this E-Module allows the presentation of material in the form of text, images, videos and animations in an integrated manner, so that students can learn hair cutting techniques in a more visual and interactive way. This provides a new approach to practical skills learning, where digital technology is optimized to enhance the student learning experience. In addition, this research also highlights the effectiveness of this media in improving learning outcomes and student engagement, which is an important contribution to the development of technology-based learning models in the skills sector.

The aim of this research is to develop and test the effectiveness of Flip Book Maker-based E-Module learning media in the Basic Hair Trimming course. The development of this E-Module aims to provide innovative solutions to improve the quality of learning that is more interactive, interesting and easily accessible to students. By utilizing the multimedia features available in Flip Book Maker, this E-Module is expected to be able to help students understand the basic concepts and techniques of hair trimming more comprehensively. Apart from that, this research also aims to find out to what extent the use of a Flip Book Maker-based E-Module can increase student learning motivation, engagement and learning outcomes compared to conventional learning methods. Through this research, it is hoped that learning models that are more effective and relevant to educational needs in the current digital era can be found.

2. METHOD

This research method is descriptive qualitative. The subjects involved in this research were students. The Flip Book Maker-based E-Module development model uses the IDI (Instructional Development Institute) system approach which includes three main stages, namely defining, developing and evaluating (Khoerunnisa & Aqwal, 2022; Prianto et al., 2022). The definition stage focuses on background analysis and problem identification. The development stage involves creating and validating a product prototype. The evaluation stage consists of testing and analysis of results. This research adopts the

IDI model because of its suitability for solving complex problems. Through needs analysis, consideration of student characteristics, and adjustments to available facilities, the learning media developed is expected to be more valid, practical, and effective in improving student learning outcomes in the Basic Haircutting Course (Adeoye-Olatunde & Olenik, 2021; El-Sabagh, 2021). A structured research design is required for development procedures. This E-Module for the Basic Hair Cutting Course Based on Flip Book Maker was created using the IDI model which includes the stages of defining, developing and evaluating. This development process is presented in Figure 1.
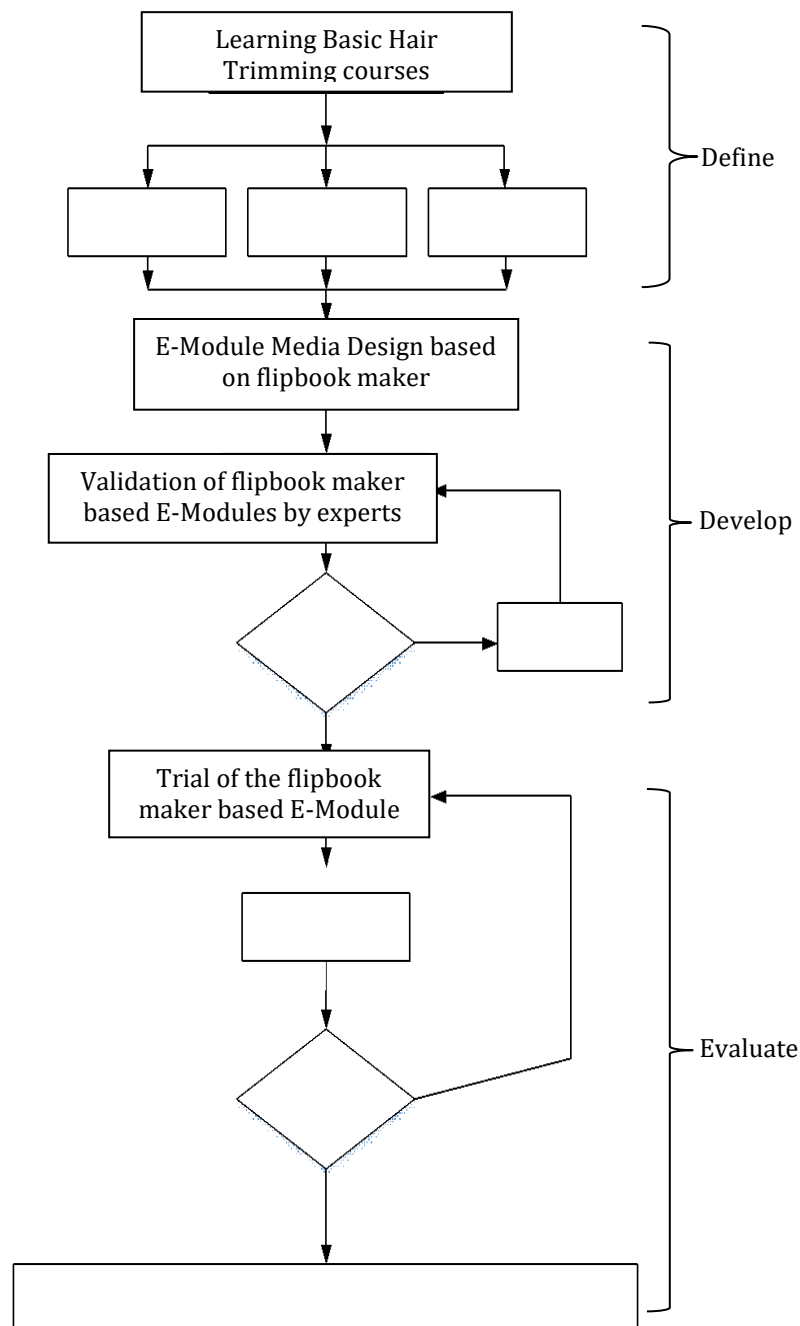

Figure 1. Flip Book Maker Based E-Module Learning Media Development Design

The research begins with the discovery (define) stage which aims to collect relevant information for the development of a Flip Book Maker-based E-Module for the Basic Hair Cutting course. This phase seeks to provide alternative media that addresses specific educational needs. Key steps in this phase include conducting observations to identify problems in the teaching of Basic Haircutting from the perspective of students and instructors. This involves analyzing learning objectives, determining target users, identifying student needs and learning resources, and determining appropriate learning media to overcome these problems. Curriculum analysis is carried out to ensure that the Flip Book Maker E-Module developed is in

line with the course synopsis and syllabus, while remaining focused on the specified learning outcomes. The student analysis aims to determine the characteristics of Applied Bachelor Diploma students enrolled in the January-June 2023/2024 semester, especially those taking the Basic Hair Cutting course. At this stage, students are expected to be able to independently analyze and formulate hypotheses based on the problems they face.

In the development stage, the findings from the definition stage are used to advance the creation of a Flip Book Maker-based E-Module for the Basic Hair Cutting course. This phase includes several steps: selecting learning media that suits the learning outcomes of the course, designing an initial prototype of the Flip Book Maker-based E-Module to meet these outcomes, and carrying out validation. Content validation ensures that the E-Module developed is in line with the course curriculum (El-Sabagh, 2021; Nabayra, 2020). Media validation ensures that the learning media meets the elements needed for effective learning in the Basic Hair Trimming course. The designed Flip Book Maker e-Module underwent consultation and discussion with experts, including media specialists and course instructors, to ensure its validity and suitability. Validation activities include filling out validation sheets and discussing until validated and appropriate learning media is obtained. This research involved four validators, namely two media validators from the Faculty of Engineering, Padang State University, one content validator from the Department of Beauty and Cosmetology, Padang State University, and one industry practitioner. The evaluation stage focuses on product validation tests, limited trials, practicality assessments, and effectiveness evaluations. The validity of learning media is determined using the Aiken's V statistical formula.

The assessment is carried out by evaluating practicality through a questionnaire that collects input from both lecturers and students. Furthermore, effectiveness is measured by measuring student learning outcomes using pretest and posttest scores, with the Gain score as an indicator of learning effectiveness. This entire research follows systematic steps to ensure that the E-Module learning media based on Flip Book Maker is valid, practical and effective in increasing student results, activity and motivation in the Basic Haircutting Course.

3. RESULT AND DISCUSSION

Result

After the research data is collected, the results are then described. The E-Module media based on Flip Book Maker was developed to increase students' abilities, creativity and independence in the Basic Hair Trimming course. This E-Module development utilized the IDI model and underwent evaluation through practicality and effectiveness testing. This media has been tested for validity, practicality and effectiveness by experts, practitioners and students.

At the discovery (define) stage, information is collected to gain an understanding of field conditions through analysis of the needs needed to create Flip Book Maker-based E-Module media. The steps taken include curriculum analysis and analysis of student characteristics. Curriculum analysis refers to the synopsis and RPS of the Basic Hair Cutting course to ensure the resulting E-Module is in line with learning outcomes. This course consists of 2 credits which are divided into 1 credit credit for theory and 1 credit for practice which includes basic concepts of hair cutting, methods, techniques, patterns, cutting angles, as well as hair cutting and styling techniques.

Currently the learning media used are print-based textbooks. Therefore, the development of an E-Module based on Flip Book Maker aims to make it easier for students and lecturers to carry out simulations that are appropriate to real conditions in the classroom. This e-Module is designed according to the expected achievements from week 9 to week 12 of the course. The final aim of using this E-Module media is for students to be able to think critically in analyzing and mastering solid pruning theory and techniques, including: horizontal solid pruning theory, backward diagonal solid pruning, forward diagonal solid pruning, and circular pattern solid pruning. Analysis of student characteristics was carried out to determine the profile of the research subjects, namely students in the 4th semester of the D4 Beauty and Cosmetology Program in the even semester of the January – June 2024 academic year.

Students who take the Basic Hair Cutting course are aged between 18-22 years and generally have the ability to analyze and formulate hypotheses. Therefore, learning is needed that improves critical thinking and analysis skills, especially in a digital context based on the E-Module Flip Book Maker. The results of curriculum analysis and student characteristics become the basis for planning and designing Flip Book Maker-based E-Modules. It is hoped that with the development of this E-Module, it will be easier for both students and lecturers to carry out more realistic and meaningful learning experiences. In the development stage of creating an E-Module using Flip Book Maker, several crucial steps were taken to ensure an effective and interesting learning experience for students learning the Basics of Hair Cutting. First,

the choice of Flip Book Maker is based on its ability to deliver dynamic and interactive learning content, combining multimedia elements such as animation and video.

This increases student engagement and facilitates understanding of complex concepts more easily. The platform's accessibility across devices and offline usability provide flexibility for students to learn anytime, anywhere. Second, the choice of the E-Module format focuses on supporting multimedia features and interactivity through quizzes and exercises, ensuring the learning material is interesting and easy to navigate.

Third, the initial design phase involves creating storyboards and design sketches using tools like Canva, ensuring a clear and attractive layout before final production. Ultimately, the output is an interactive E-Module that covers the theoretical foundations and practical techniques in hair trimming, enriched with videos, animations and quizzes. The final product undergoes rigorous testing and validation by experts and students to ensure its effectiveness and usefulness in facilitating a comprehensive learning experience.

Figure 2. Cover Display on E-Module Learning Media Based on Flipbook Maker

Figure 3. Presentation of E-Module Learning Media Based on Flipbook Maker

After the development process of the Flip Book Maker-based E-Module, an evaluation was carried out to assess the validity of the media and content contained therein. Two expert validators were evaluated to validate the Flip Book Maker-based E-Module media which was developed with a focus on presentation, usability, functionality and language aspects. Likewise, two expert validators were evaluated to validate the content contained in the Flip Book Maker-based E-Module, assessing aspects of self-directed learning, mastery learning, independence, adaptability, friendliness, E-Module components, and Flip Book Maker. media-based aspects.

The results of the analysis using the Aiken's V statistical formula produce a validation value for the impact on Flip Book Maker based E-Module media. A summary of validation results from the Flip Book Maker-based E-Module media aspect is presented in Table 1.

Table 1. Media Validity Test Results

NO	Validator	Indicator	Validator 1	Validator 2	Average
1	Media Specialist	Presentation	0.75	0.83	
		Usage	1	0.83	0.90
		Functionality	1	0.88	
		Language	1	0.92	
Average			**0.94**	**0.86**	

NO	Validator	Indicator	Validator 1	Validator 2	Average
2	Content Expert	Independent Learning	0.83	0.94	
		Mastery Learning	0.75	0.92	
		Independence	1	1	
		Adaptability	1	0.88	0.93
		Friendliness	0.83	1.00	
		E-Module Components	0.86	0.96	
		Media Aspect	0.95	1.00	
Average			**0.89**	**0.96**	

Evaluation of the practicality of the Flip Book Maker-based E-Module as a learning medium in the Basic Haircut course was carried out by analyzing questionnaires filled out by course lecturers, industry practitioners and students. The practicality of the Flip Book Maker-based E-Module was assessed in terms of ease of use, based on a questionnaire filled out by one lecturer, one industry practitioner and 26 students. The results of the practical evaluation of the Flip Book Maker based E-Module are presented in Table 2.

Table 2. Media Practicality Results

No	Assessment Aspects	Lecturer Practicality	Student Practicality	Information
1	Technical	90.00	88.46	Very Practical
2	Effective	100.00	96.92	Very Practical
3	Design	90.00	92.12	Very Practical
4	Interpretation	90.00	90.38	Very Practical
5	Equivalence	86.67	86.92	Very Practical
Average		**91.33**	**90.96**	**Very Practical**

The practicality assessment includes five aspects: technical, effectiveness, design, interpretability, and equivalence. The results of the analysis show that based on evaluations from practitioners, the Flip Book Maker-based E-Module developed has proven to be very practical for use in learning. Assessments from practitioners show that this media reaches a practicality level of 91.33%, while from students it reaches 90.96%. Therefore, it can be concluded that the Flip Book Maker-based E-Module is categorized as "very practical" for use in the learning process.

The effectiveness of student learning is measured by increasing student learning outcomes using the gain score. The Flip Book Maker based E-Module is said to be effective if the gain score obtained is ≥ 0.3 indicating a medium level of effectiveness. Finally, the effectiveness of the E-Module was evaluated through analysis of score results from pretest and posttest data. With a score of 0.75 which is relatively high, the E-Module is proven to significantly improve student understanding and learning outcomes. Overall, the Flip Book Maker based E-Module shows itself as an effective and practical learning tool, supporting interactive learning processes and aiming to achieve optimal results.

Discussion

Based on the research results, the use of this E-Module has a significant positive impact on increasing student understanding and skills. This can be explained by the superiority of Flip Book Maker which is able to present learning material visually, interactively and structured, in contrast to conventional methods which tend to be monotonous and non-interactive(Rahmiati et al., 2023; Rojaki, 2023). The multimedia features in the E-Module, such as video demonstrations of hair cutting, pictures of the steps, and clear explanatory text, make it easier for students to understand and apply the techniques learned. In the context of learning practical skills, students' ability to observe and imitate processes that are demonstrated visually is very important(Akbar et al., 2022; Suharsono et al., 2023). The Flip Book Maker-based e-Module provides flexibility for students to access material anytime and anywhere, as well as to repeat material as needed. It also supports independent learning, where students can learn at their own pace and learning style. In addition, this research found that students who used the E-Module were more motivated and actively involved in the learning process, compared to students who only used conventional teaching methods(Abdullah et al., 2020; Fadillah et al., 2021; Wibowo & Pratiwi, 2018)

Another aspect discussed is the ease of use of Flip Book Maker by teachers in designing learning materials. Flip Book Maker offers an accessible interface and allows teachers to design engaging E-Modules without requiring in-depth technical skills. The use of this technology also allows the integration of various content formats (text, images, videos), which is able to support student understanding of complex material(et al., 2022; Yuniasih, 2020) However, this research also notes several challenges, such as the need for

adequate access to digital tools and additional training for teachers to maximize the potential of the E-Module. Nevertheless, these findings provide insight that the E-Module media based on Flip Book Maker is a relevant and effective innovation in learning practical skills, especially in the current digital era.(Anak Agung Meka Maharcika et al., 2021; Novitasari & Dian Tiara, 2022; Romayanti et al., 2020). Thus, this research makes an important contribution to the development of technology-based learning media that can be applied in various scientific disciplines, especially in the field of technical skills. The discussion in this research focuses on the effectiveness of the Flip Book Maker-based E-Module media in supporting learning for the Basic Hair Cutting course. Based on the research results, the use of this E-Module has a significant positive impact on increasing student understanding and skills. This can be explained by the superiority of Flip Book Maker which is able to present learning material visually, interactively and structured, in contrast to conventional methods which tend to be monotonous and non-interactive. The multimedia features in the E-Module, such as video demonstrations of hair cutting, pictures of the steps, and clear explanatory text, make it easier for students to understand and apply the techniques learned.

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4. CONCLUSION

Flip Book Maker-based E-Module development follows a structured IDI model, ensuring comprehensive analysis, design and evaluation stages. Through rigorous validation and testing, the E-Module was proven to be valid, practical, and effective in increasing student engagement and learning outcomes in the Basic Hair Barbering course. This research contributes to improving educational practices by integrating interactive digital tools that meet diverse learning needs and preferences, thereby fostering more dynamic and effective learning environments. Future developments could leverage this framework to expand the application of digital learning resources across a variety of disciplines and educational settings.

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