

## Practicality of E-Modules Based on Differentiated Learning and Flipbook Technology in Al-Qur'an Hadith Instruction

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### ARTICLE INFO

#### *Keywords:*

e-module;  
differentiated learning;  
flipbook;  
Al-Qur'an Hadith Instruction;  
practicality assessment

#### *Article history:*

Received 2025-02-19

Revised 2025-03-19

Accepted 2025-09-30

### ABSTRACT

The integration of differentiated learning with digital technologies such as Flipbook offers new opportunities for inclusive instruction, particularly in Islamic education. This study investigates the practicality of E-Modules designed with differentiated learning principles and Flipbook technology in the teaching of Al-Qur'an Hadith at the Madrasah Tsanawiyah (MTsN 3 Padang). Using a mixed-methods approach, the study involved one educator and 24 students. Quantitative data were gathered via practicality questionnaires, while qualitative input was collected through open-ended feedback. Quantitative data were analysed descriptively, and qualitative responses were processed using thematic analysis. Findings show that the E-Module is considered highly practical, with an overall practicality score of 82% from educators and 85% from students. Users highlighted ease of navigation, clarity of instructions, and the effectiveness of interactive features such as quizzes and videos. However, both groups identified areas for improvement—especially in content readability, font size, and visual layout. The results suggest that Flipbook-assisted, differentiated E-Modules effectively support learning in Islamic education settings. They accommodate various learning styles and enhance engagement. Nevertheless, improvements in design and content presentation are recommended. This study addresses a gap in Islamic learning media research and contributes to the development of inclusive, technology-integrated instruction. With refinements addressing readability and learner diversity—including readiness, interests, and talents—such E-Modules hold strong potential as effective tools in Qur'anic Hadith education.

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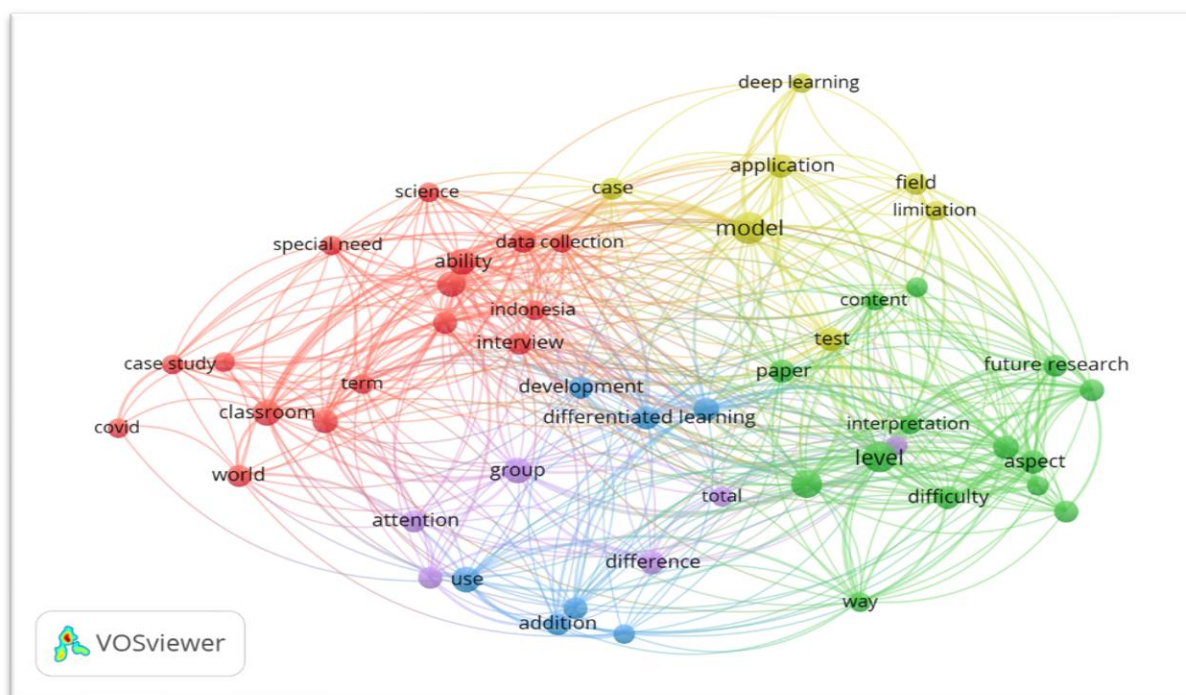
## 1. INTRODUCTION

Studying the Quran and the Hadith is an obligation and a fundamental spiritual need of a Muslim because these two sources are the main guidelines for living everyday life. The Quran and Hadith not only contain religious teachings, but also comprehensive moral, social and spiritual guidance. However, in the context of education, every student has different backgrounds, abilities and learning styles. Some students may understand Arabic texts more quickly, while others need a visual or contextual approach to absorb the meaning of verses and hadith. This poses a challenge for educators to ensure that all students can access and understand the material well, without ignoring the uniqueness of each individual.

Differentiated learning is an important solution to this challenge, as this approach allows educators to customise methods, materials and assessments according to students' needs and abilities. Differentiated learning seeks to accommodate the diversity of students in the classroom by adjusting teaching materials, learning processes, and learning products according to each individual's ability level and learning style. In the context of differentiated learning, there are three main aspects to consider: content, process and product differentiation. Content differentiation refers to learning materials that are tailored to students' interests and learning styles. Learning materials can be provided in the form of text, audio, games, or other tools according to the way students process information. Process differentiation focuses on how students learn, by providing a variety of teaching approaches, whether through individual, small group or collaborative learning, which allows students to learn according to their interests or based on the level of difficulty that suits their abilities. Finally, product differentiation concerns learning outcomes that can differ, based on students' interests and ability to understand the material. This can be in the form of question and answer tasks, projects or presentations that reflect mastery of the material according to how they learn and develop (Tomlinson & Imbeau, 2010).

In the subject of Al-Quran Hadis, differentiated learning can help students who have difficulty reading Arabic texts by providing translation, audio or visualisation, while more advanced students can be invited to explore the tafsir or historical context of verses and hadith. Thus, differentiated learning not only ensures that all students achieve the learning objectives but also creates a learning experience that is more inclusive, meaningful and relevant to their spiritual lives. This approach is also in line with Islamic principles that value diversity and make it easier for people to understand the teachings of their religion (Mardiati, Anwar, Darmansyah, Erianjoni, & Syahriani, 2024; Mujahid, Aderus, Mirnawati, & Firman, 2022; Mustofa et al., 2023).

In line with differentiated learning, the implementation of e-modules has become an urgency in modern education due to its ability to accommodate students' diverse learning needs. E-modules not only increase learning effectiveness, but also allow personalisation of the learning process according to individual learning pace and style. A study by Astalini et al. (2024) showed that technology-based e-modules such as augmented reality had a positive impact on students' argumentation skills by 42.2%, increased perseverance by 47.6%, and increased curiosity in learning the concept of renewable energy by 47.4%. This confirms that the integration of e-modules can increase student engagement in learning. In addition, research by Palinussa et al. (2025) proved that the e-module-based Realistic Mathematics Education (RME) approach is more effective than conventional methods in improving mathematics learning outcomes, indicating that e-modules provide flexibility for students to understand the material better.



**Figure 1.** VOSviewer Analysis Results

Figure 1, a visualisation of the word network generated by the VOSviewer software, illustrates the relationship between various concepts that often appear in the study of differentiated learning, particularly in educational contexts. In this figure, the keywords that are connected to each other have colours and positions that indicate the level of connection between the concepts. The red areas refer to topics that are more related to aspects such as special needs, abilities and classrooms, which focus on the individual in the learning context. Key words such as "ability" and "special needs" indicate attention to teaching that takes into account the needs of each individual student. The green part of the image depicts concepts related to research and application of the model, such as "way," "application," and "future research." This reflects the importance of developing and applying learning ways that can adapt to the specific needs of students and respond to challenges in education, especially those related to students' varied abilities. In the blue section, concepts such as "use," "group," and "attention" indicate the importance of attention to group-based teaching methods, as well as the use of more inclusive and collaborative approaches in improving student engagement and understanding.

In the context of Qur'anic Hadith learning, as reflected in the relationship between the words "future research" and "difficulty," we can also draw parallels with the challenges that exist in religious education research, which continues to evolve in understanding how best to teach the sacred teachings of the Qur'an and Hadith, especially in response to the increasingly complex challenges of modern times. Adaptive Qur'anic and Hadith learning, taking into account the development of knowledge, and respecting individual differences are the essence of humane and effective education.

E-Modules themselves will certainly be better if they are implemented in conjunction with differentiated learning. Increased student engagement in learning is one of the advantages of differentiated e-modules. Research by Mary Dankbaar et al. (2017) revealed that although serious games are more engaging for medical students, e-modules remain an effective method in improving their understanding of patient safety. In the context of differentiated learning, e-modules provide opportunities for students to set their own learning rhythm. This is in line with Oktaviani's & Satanti's research (2024), which showed that differentiation-based learning integrated in problem-based learning e-modules contributed to improving students' computational thinking skills. With the interactive features in e-modules, students can be more active in the learning process and have control over their

learning development. In addition, research by Winarto et al. (2025) revealed that 98% of teachers have an interest in differentiated learning because this method allows them to adjust teaching strategies to the needs of students. However, only 70% of teachers were able to implement it consistently, indicating the need for further training to optimise the implementation of differentiation through e-modules.

In addition to increasing effectiveness and student engagement, e-modules also play a role in supporting educational equity and inclusiveness in learning. Research by Eko Wahyudi et al. (2025) highlights that many teaching methods used today are less relevant to the needs of the times. Therefore, e-modules based on local wisdom were developed as a solution to improve students' cultural literacy and critical thinking, so that learning becomes more contextual and meaningful. In another study, Roberto G. Sagge & Salvador P. Bacio (2024) proved that the combination of video explainer and e-module provided significant improvement in students' performance in statistics. This confirms that e-modules not only act as an independent learning tool but can also be combined with other media to improve student understanding. In the context of inclusive education, research by Lindner & Schwab (2020) emphasises that differentiated learning is essential in creating a more equitable learning space for all students. With features that can be adjusted to students' readiness levels, e-modules ensure that every individual gets equal learning opportunities without having to follow uniform standards.

Closely related to E-Modules, Flipbook technology is increasingly used in education because of its flexibility and ability to enhance students' more interactive and engaging learning experience. Flipbooks not only replace conventional textbooks, but also offer a more dynamic learning experience with multimedia features such as animations, images and digital interactions. This technology has been proven to improve concept understanding, student engagement and overall learning effectiveness.

The application of Flipbook in various fields of study shows positive results. Research by Prasetyono et al. (2020) at Universitas Peradaban, Brebes, Indonesia, shows that the use of Flipbook in learning logic gate material can significantly improve students' logical thinking skills. Flipbook design validation from media experts and peers gave high scores, indicating that Flipbooks can be an effective tool in delivering complex material in a way that is easier to understand. Similar results were found in Sumarmi's et al. research (2021) at the State University of Malang, which assessed the impact of Flipbook in digital eco-learning. This research proves that Flipbook can improve students' environmental project literacy and ecological competence, with a more flexible and effective approach than conventional methods.

The main advantage of Flipbook lies in its ability to increase students' learning engagement and motivation. A study by Bunari et al. (2024) at SMP Negeri 1 Yogyakarta showed that the use of Flipbooks in learning had a positive impact on student learning outcomes, especially when combined with the factors of interest and learning motivation. The use of Flipbooks in the learning process allows students to be more interactive with the material, thus increasing their engagement in learning. Another study by Emilia et al. (2024) at Medan State University found that interactive Flipbooks significantly improved students' nutritional knowledge in the Mandailing culinary programme. Students who used the Flipbook showed better understanding in balanced menu planning than those who only used the e-book, confirming that the Flipbook provides a more engaging and applicable learning experience.

In addition to increasing motivation, Flipbooks also play an important role in helping students understand more complex academic concepts. A study by Dewi & Wibawa (2024) showed that a Flipbook based on the local culture of megedong-gedongan was effective in improving science literacy among biology and marine students. By integrating local cultural knowledge into scientific concepts, the Flipbook helps students connect theories with the context of everyday life, making learning more relevant and engaging. This effectiveness was also seen in a study by Usman et al. (2024) which examined the perceptions of students and lecturers from Universitas Negeri Jakarta, Borneo Tarakan University, and Halu Oleo University towards the use of Flipbooks in English language learning for prospective elementary school teachers. The results showed that Flipbook not only helped students understand English concepts better, but also improved critical thinking skills through student-centred learning methods.

In the field of educational technology, Flipbook also plays a role in supporting blended learning. Research by Müller & Mildenerger (2021) in Switzerland shows that blended learning that integrates digital technologies such as Flipbooks can produce learning outcomes that are comparable or even slightly better than traditional classroom methods. With the flexibility of access offered, Flipbook allows students to learn independently outside of class, providing greater opportunities for more in-depth exploration of the material. Another study by Attard & Holmes (2022) in Australia found that the use of technology in blended learning allows for more effective differentiation of learning, providing multiple access points for students in understanding the subject matter.

This study aims to examine the practicality of using E-Modules based on differentiated learning assisted by Flipbook in learning Al-Qur'an Hadith in Madrasah Tsanawiyah. Theoretically, this research contributes to the development of differentiated learning theory in the context of learning Al-Qur'an Hadith. In addition, this research also plays a role in developing more practical learning of Al-Qur'an Hadith through the application of E-Modules based on differentiated learning. Hopefully, this E-Module can be continuously updated by considering not only students' learning styles, but also their readiness, interests, and talents, so that it becomes a more inclusive and effective learning media. Practically, this research provides recommendations for educational institutions to prepare infrastructure and human resources to support the application of technology in learning, and suggests that educators to utilise Flipbook-based technology as a tool that can accommodate students' various learning styles.

## 2. METHODS

The research approach used in this study is mixed-method. This research was conducted at MTsN 3 Kota Padang. MTsN 3 Kota Padang was chosen because it is the only Madrasah at the Tsanawiyah level in West Sumatra Province that has a digital class, namely class VIII 1, where all students take part in learning using computer devices facilitated by the school. The selection of this school is based on the existence of digital classroom facilities that support the use of technology in the learning process, so it is relevant to the purpose of this study, which aims to evaluate the level of practicality of the developed product in the context of using technology in schools. The research subjects consisted of an educator of Al-Qur'an Hadith subject, initially Z, and 24 students of class VIII 1. This limited sample size of 24 students and one teacher may affect the extent to which the results of this study can be generalised. Therefore, this limitation should be noted, and it is suggested that further research be conducted with a larger and more diverse sample to increase the external validity of the findings.

Quantitative data were collected through a practical questionnaire distributed to educators and students on 22 October 2024. The questionnaire aimed to assess the practicality of the developed product, focusing on several key aspects such as ease of use, functional appropriateness, user satisfaction, and readability. Each item in the questionnaire required respondents to rate the practicality of specific features of the e-module on a scale from 0% to 100%. The questions covered the clarity of navigation, ease of understanding instructions, independent usability, alignment with learning objectives, the effectiveness of interactive features, user satisfaction, and readability. The quantitative data were then analyzed using a descriptive statistical approach, calculating the average percentage of practicality scores for each criterion. Based on the scores, each aspect was categorized into different levels of practicality: "Very Practical," "Practical," or "Practical Enough."

Qualitative data were gathered from suggestions for product improvement provided by educators and students. These suggestions were open-ended responses collected alongside the practicality questionnaire. Thematic analysis was conducted on the qualitative data to identify recurring themes and patterns in the feedback. This process involved several steps: initially, the responses were coded into categories based on commonalities in the suggestions. Then, themes were developed to reflect the specific areas of improvement as highlighted by the users. For example, some learners, such as AP, suggested adding interactive features to make the E-Module more interesting and increase user

engagement. Meanwhile, ANW and MAA highlighted the importance of providing a tutorial for using the E-Module so that new users can more easily understand how to operate it. By combining both quantitative and qualitative analyses, the practicality of the e-module was assessed holistically, highlighting both its strengths and areas for improvement.

### 3. FINDINGS AND DISCUSSION

#### 3.1. Findings

The practicality of the product was analysed based on a questionnaire that had been filled in by educators and students of class VIII 1 MTsN 3 Padang City. Educator practicality in this study was carried out by one Al-Qur'an Hadith educator in class VIII 1 MTsN 3 Padang City. The educator's practicality test was conducted at MTsN 3 Padang City on 22 October 2024. The results of the E-Module's practicality from educators are as follows:

**Table 1.** Educator Practicality Results

No.	Criteria	Percentage of Practicality Score (%)	Practicality Level
<b>I. Ease of Use Aspect</b>			
1	Navigation in the e-module is clear and easy to understand.	80	Practical
2	The instructions given in each section of the module are clear and easy to follow.	100	Very Practical
3	Users can use the e-module independently.	80	Practical
<b>II. Aspects of Function Appropriateness</b>			
4	The e-module functions in accordance with the set learning objectives.	80	Practical
5	Interactive features (such as quizzes and videos) work well.	80	Practical
<b>III. User Satisfaction Aspects</b>			
6	Users are satisfied using e-modules for learning.	80	Practical
7	E-modules help users understand the material better.	80	Practical
<b>IV. Readability and Comprehensibility</b>			
8	The language used in the e-module is easy to understand.	100	Very Practical
9	The font size and layout of the e-module support readability.	60	Practical enough
<b>Total</b>		82	Practical

The results of the educators' practicality above show several important aspects, namely ease of use, accuracy of function, user satisfaction, and readability and understandability. In terms of ease of use, the results show that the navigation in the e-module is clear and easy to understand, with a score of 80%, which indicates that this e-module can be accessed well by users. The instructions provided in each section of the module also received a perfect score of 100%, indicating that the guidance is very clear and easy to follow. In addition, the e-module can also be used independently by users, with a result of 80%, which means that most users are able to utilise the e-module without additional assistance. On the aspect of accuracy of function, the e-module functions in accordance with the learning objectives that have been set, with a score of 80%, which indicates that the e-module supports the achievement of learning objectives effectively.

Interactive features, such as quizzes and videos, also functioned well, receiving the same score of 80%, indicating that these interactive elements contributed positively to the learning experience. In terms of user satisfaction, the e-module successfully provided a satisfactory learning experience with a score of 80%, indicating a high level of satisfaction from users. In addition, the e-module also proved to help users understand the material better, with the same result of 80%, signifying that the module is effective in improving understanding of the material.

For the readability and understandability aspect, the language used in the e-module is very easy to understand, which is reflected in the perfect score of 100%, indicating that the language used is very supportive of user understanding. However, regarding font size and layout, which support readability, the score obtained is 60%, indicating that this visual aspect still needs improvement in order to increase reader comfort. Overall, this e-module is in the very practical category with a total score of 37 out of a maximum of 45, which is 82%. Although overall it is classified as very practical, there is one area that needs to be improved, namely in terms of readability, especially in the design of font size and layout that needs to be adjusted to better support user comfort with a percentage of 60%.

The practicality of students in this study was attended by 24 students of class VIII 1 MTsN 3 Padang City. The educator practicality test was conducted at MTsN 3 Padang City, on 22 October 2024. The results of the practicality of the E-Module from students are as follows:

**Table 2.** Practicality Results of Learners

No.	Criteria	Percentage of Practicality Score (%)	Practicality Level
<b>I. Ease of Use Aspect</b>			
1	Navigation in the e-module is clear and easy to understand.	83	Very Practical
2	The instructions given in each section of the module are clear and easy to follow.	86	Very Practical
3	Users can use the e-module independently.	88	Very Practical
<b>II. Aspects of Function Appropriateness</b>			
4	The e-module functions in accordance with the set learning objectives.	85	Very Practical
5	Interactive features (such as quizzes and videos) work well.	88	Very Practical
<b>III. User Satisfaction Aspects</b>			
6	Users are satisfied using e-modules for learning.	85	Very Practical
7	E-modules help users understand the material better.	84	Very Practical
<b>IV. Readability and Comprehensibility</b>			
8	The language used in the e-module is easy to understand.	89	Very Practical
9	The font size and layout of the e-module support readability.	80	Practical
<b>Total</b>		85	Very Practical

The results of the students' practicality above show several important aspects, namely ease of use, accuracy of function, user satisfaction, and readability and understandability. The results showed that this E-Module had a very good level of practicality, with a total score of 922 out of a maximum score of 1080, resulting in a percentage of practicality of 85%. These results are categorised as "Very Practical" which means that this E-Module is very practical to use.

All aspects are in the range of 80%-100% which can be interpreted as very practical. In terms of ease of use, the navigation in the e-module is considered clear and easy to understand, with a percentage of 83%. The instructions given are also very easy to follow (86%), and users can use the e-

module independently, with a practicality percentage of 88%. On the aspect of function accuracy, the e-module is considered to be in accordance with the learning objectives that have been set (85%) and its interactive features, such as quizzes and videos, function well (88%).

Furthermore, on the user satisfaction aspect, the majority of learners were satisfied with the learning experience using the e-module (85%) and stated that this module helped them understand the material better (84%). Finally, on the readability and understandability aspect, the language used in the module was rated as easy to understand (89%), and the layout and font size supported readability (80%). Overall, this study concluded that this e-module is very practical and does not require further revision.

**Table 3.** Suggestions for Improvement from Educators

Practitioner Initial	Identity	Suggested Improvements
Z	Al-Qur'an Hadith Educator Class VIII 1 MTsN 3 Padang City	Need additional explanation on the material.

Based on the suggestions for improvement given by educators, initially Z, as an educator of Al-Qur'an Hadith subjects in class VIII 1 MTsN 3 Padang City, there are suggestions for improvement that need to be considered in the development of E-Modules. She suggested that the material in the E-Module be equipped with additional explanations so that students can understand the concepts taught more deeply. Therefore, the improvements made include the addition and enrichment of material in the E-Module, both in the form of more detailed text and the inclusion of relevant illustrations or concrete examples. In addition, a more interactive presentation of the material will be considered to improve learners' understanding of the learning content.

**Table 4.** Learner Suggestions for Improvement

No.	Initial of Learner	Advice modulus of elasticity
1	AP	Add various other unique features to attract people's attention.
2	ANW	Add how to use this module
3	KM	My suggestion is that this e-module is enlarged in size so that you can clearly see the contents of this e-module.
4	RS	My suggestion about this e-module is, add more material to make it more interesting to read and add more pages.
5	ARL	If possible, not too few pages
6	MNAY	My suggestion is to increase the pages and quizzes in this module.
7	DPA	My suggestion is to increase the number of pages and quizzes in this module.
8	NPNR	My suggestion is to increase the pages and quizzes in this e-module.
9	LSA	It would be good to add a conclusion about the lessons shown in this e-module.
10	RS	Increase the number of pages in the e-module
11	MAA	Add a tutorial for using the e-module to make it easier for people who use it for the first time.
12	ADAP	Please enlarge the font
13	AFR	The suggestion is to add a few more pages.
14	HAD	Suggestions to make the letters/sentences bigger (clearer)
15	AA	The material should be explained more clearly / more in order to understand it further
16	TAN	The material should be explained in more detail and more concisely to make it easier to understand.
17	KR	Some fonts are too small and hard to read

No.	Initial of Learner	Advice modulus of elasticity
18	LAA	We recommend that the learning provided should be more detailed so that it is easier to understand.
19	AN	There are some pages or video commands that cannot be opened and some pages that have text that is too small.

Based on suggestions for improvement from students of class VIII 1 MTsN 3 Padang City, there are several suggestions for improvement that can be used as material for further development of the E-Module. These suggestions include adding features, improving visual design, and improving content to make it more informative, interesting, and easy to use. Some learners, such as AP, suggested adding interactive features to make the E-Module more interesting and increase user engagement. Meanwhile, ANW and MAA highlighted the importance of providing a tutorial for using the E-Module so that new users can more easily understand how to operate it.

From the visual design aspect, some learners, including KM, ADAP, HAD, and KR, suggested increasing the font size and adjusting the layout to make the writing clearer and more comfortable to read. This shows the need to improve readability to increase comfort in using the E-Module. In addition, many learners suggested increasing the number of pages and learning materials, as stated by RS, ARL, MNAY, DPA, and NPNR. They felt that the E-Module needed to be supplemented with more in-depth materials and additional quizzes to be more effective in improving their understanding.

In terms of content, AA, TAN, and LAA suggested a more detailed and concise explanation of the material, so that students can understand the learning content better. In addition, LSA suggested adding a conclusion at the end of the module to summarise the material learned. Some feedback also highlighted technical issues, such as that submitted by AN, who stated that some videos in the E-Module could not be opened. This indicates the need to optimise the multimedia features so that users can access every element in the module properly.

As a follow-up to this evaluation, improvements to be made include adjusting the font size and layout to make it more comfortable to read, adding interactive features and usage tutorials to increase attractiveness and ease of navigation, and increasing the number of pages, materials, and quizzes to enrich the learning experience of students. In addition, the accessibility of multimedia features will be optimised so that all elements in the E-Module can function properly. Material enhancement with more detailed explanations and additional conclusions at the end of each lesson will also be implemented to improve learners' understanding. By integrating these suggestions, it is hoped that the E-Module can become a more effective, interesting, and easy-to-use learning media.

Overall, these suggestions provide clear guidance for the development of the E-Module in a better direction. The addition of interactive features, improvement of visual appearance, more in-depth explanation of the material, as well as optimisation of technical elements are steps that can be taken to improve the quality of E-Modules. By integrating these inputs, the E-Module will not only be a more effective learning media, but also more attractive and comfortable to be used by learners.

### 3.2. Discussion

In the current landscape of digital education, the use of electronic modules (e-modules) has become increasingly prevalent as a means to enhance learning effectiveness. This study investigated the practicality of an Al-Qur'an Hadith e-module used by Grade VIII-1 students and educators at MTsN 3 Padang City. The practicality assessment was based on four primary indicators: ease of use, functional accuracy, user satisfaction, and readability. These findings are discussed in the context of existing literature to highlight the broader implications and potential for development.

The study found that the Al-Qur'an Hadith e-module was generally perceived as easy to use, with clear navigation systems. A substantial proportion of both educators (80%) and students (83%) reported that the e-module was easy to understand. Furthermore, the clarity of instructions within the module

was highlighted, receiving full approval from educators (100%) and a high level of agreement from students (86%). These findings align with research by Dahal et al. (2023), which indicated that user-friendly and accessible e-modules can enhance perceived practicality by up to 71%. Similarly, Asmianto et al. (2022) reported that Android-based e-modules contribute significantly to user flexibility and convenience, particularly in mobile learning environments.

Regarding the alignment of the e-module's functions with learning objectives, 80% of educators and 85% of learners rated the module as appropriate and effective. The integration of interactive features—such as embedded quizzes and videos—was especially appreciated, garnering positive responses ranging from 80% to 88%. These findings are consistent with research by Astalini et al. (2024), who found that the inclusion of interactive components in e-modules increased student engagement and learning persistence by up to 47.6%. Furthermore, Dankbaar et al. (2017) emphasized that while serious games can foster engagement, e-modules tend to be more straightforward and effective for knowledge acquisition.

High levels of user satisfaction were evident, with 80% of educators and 85% of learners expressing contentment with the module. Additionally, the module was found to significantly aid in understanding course material, with 80% of educators and 84% of learners acknowledging this benefit. These results support the findings of Hardeli et al. (2023), whose study on discovery learning-based e-modules in chemistry demonstrated notable improvements in conceptual understanding. Utaminingsih and Ellianawati (2025) similarly reported that STEAM-based e-modules achieved high levels of practicality—86% from students and 96% from educators—further validating their effectiveness in supporting learning.

While the readability of the module's language scored 100% approval, concerns were raised about the visual presentation. Font size and layout were less well-received, with only 60% of educators and 80% of learners finding them satisfactory. Several students suggested improvements in this area. These concerns mirror those found in the study by Yanto et al. (2023), which emphasized the role of ergonomic design in enhancing both readability and user engagement. Additionally, Wahyudi et al. (2025) underscored the importance of incorporating elements of local wisdom into e-modules to increase student interest—an approach that could also improve visual appeal and relevance.

The overall practicality of the e-module was rated as very good, with 82% approval from educators and 85% from learners. These findings reinforce the notion that well-designed e-modules can significantly enhance student engagement and comprehension (Astalini et al., 2024; Prasetya et al., 2022). Nevertheless, this study also identified specific areas for improvement, especially regarding visual design and readability.

The integration of additional multimedia elements was suggested as a means to enhance the module's effectiveness. Research by Sagge and Bacio (2024) supports this recommendation, demonstrating that combining e-modules with explainer videos can significantly improve learning outcomes. Thus, enriching the e-module with more varied media content could yield more engaging and effective instructional materials.

The feedback gathered from educators and learners revealed several actionable insights. Among the most frequently cited areas for improvement were the depth of content, interactivity, visual presentation, and technical reliability. For example, Educator Z recommended expanding the module's content with deeper explanations and more contextually relevant examples. This aligns with the study by Astalini et al. (2024), which showed that augmented reality-based e-modules can offer a richer learning experience and improve student engagement.

Students also suggested increasing the interactivity of the e-module through features like quizzes, activities, and tutorials. Julaeshy et al. (2023) found that such interactive elements are instrumental in enhancing motivation and engagement in digital learning environments. The need for user guidance is especially crucial for first-time users, as emphasized in research from Jambi University (Astalini et al., 2024), which highlighted the importance of tutorial features in supporting effective user onboarding.

In terms of visual improvements, feedback focused on the need for more user-friendly layouts and larger fonts. These aspects are critical to the module's overall practicality and were also emphasized in the findings of Utaminingsih and Ellianawati (2025), who noted that accessible design contributes to a more comfortable and effective learning experience. Furthermore, technical issues—such as malfunctioning videos—were noted, reaffirming the need to ensure that multimedia features are reliable and do not hinder the learning process (Dankbaar et al., 2017).

This study also highlights the value of flipbook-assisted e-modules, which combine the flexibility of digital learning with a structured pedagogical framework. Müller and Mildnerberger (2021) reported that blended learning environments incorporating 30–79% online content—such as those facilitated by flipbooks—yield learning outcomes equal to or better than traditional methods, due to improved accessibility and time flexibility. Supporting this, Alenezi (2020) found that digital materials like flipbooks enhance teaching efficiency by accommodating diverse socio-demographic backgrounds.

Flipbooks are also shown to support differentiated learning, offering visual and interactive methods that accommodate various student needs (Attard & Holmes, 2022). Prasetyono and Hariyono (2020) further confirmed that web-based flipbooks improve logical reasoning skills and have strong expert validation (80%–84.78%). Hence, flipbooks not only support technological integration but also meet pedagogical demands for personalisation and effectiveness.

Beyond academic literacy, flipbooks have been found to support cultural and environmental literacy as well. Maulana et al. (2024) and Dewi and Wibawa (2024) demonstrated that integrating local culture into flipbooks promotes both science literacy and cultural identity, supporting the development of students in line with the Pancasila student profile. Environmental literacy also benefits from this approach, as shown in studies by Sumarmi et al. (2021) and Bunari et al. (2024), which used student worksheet flipbooks to deliver content that is both interactive and contextually relevant.

Technical validation further underscores the practicality of flipbooks. For instance, Maulana et al. (2024) reported validation scores as high as 90%, while Mutiara et al. (2022) recorded a perfect rating of 4.0/4.0. Field trials involving hundreds of participants (Emilia et al., 2024; Usman et al., 2024) have confirmed the acceptability and usability of these tools. Although challenges related to workload and technical limitations have been reported (Suripto et al., 2024; Usman et al., 2024), the flexibility, clarity, and visual effectiveness of flipbooks continue to make them a practical solution across various educational contexts (Maulana et al., 2024; Mutiara & Emilia, 2022).

Finally, differentiated e-modules were found to be particularly practical in the context of Al-Qur'an Hadith education. Given the diverse learning speeds and styles among students, differentiated instruction enables educators to tailor content to individual needs. Learners who grasp concepts quickly may benefit from visual materials, while auditory or kinesthetic learners can engage with audio content or physical interaction tasks. Tomlinson and Imbeau (2010) advocate for differentiated learning as an effective strategy in mixed-ability classrooms, and the use of e-modules facilitates this through the provision of diverse content types.

Additionally, the ability to monitor student progress via embedded assessment links enhances the practicality of e-modules by enabling precise feedback and data-driven instruction. This supports self-directed learning and ensures equitable access to materials, anytime and anywhere.

#### 4. CONCLUSION

This study contributes significantly to the field of Islamic education and educational technology by demonstrating that e-modules designed with differentiated learning principles and supported by Flipbook technology can effectively enhance student engagement and comprehension in *Al-Qur'an Hadith* learning, particularly for learners with diverse styles and abilities. The findings underscore the value of inclusive, flexible digital media in modern madrasah education and highlight the potential scalability of such tools to broader educational contexts. However, the research also identified limitations, particularly in terms of technology readiness and the need for adequate teacher training,

which may affect implementation across institutions with varying resources. Addressing these challenges requires structured professional development for educators and the provision of necessary digital infrastructure. For future research, it is recommended that the long-term effects of e-module usage on students' deeper understanding of the Qur'an and Hadith be investigated, as well as to explore the integration of Flipbook-based modules in other subjects. Comparative studies between traditional and technology-assisted learning methods are also essential to evaluate the broader effectiveness and pedagogical impact of e-modules in Islamic education.

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