



Development of a Malay Culture-Based Flipbook-Assisted E-Module for Teaching Procedural Text Writing to Seventh-Grade Students

Fitrah¹, Mangatur Sinaga¹, Charlina¹

¹Master of Indonesian Language Education Study Program, Universitas Riau

*Corresponding Author: Fitrah

Email: fitrah6889@grad.unri.ac.id

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Abstract

This study was motivated by the limited availability of digital instructional materials that support procedural text writing instruction while integrating local culture into Indonesian language learning. Therefore, the study aimed to describe the development procedure as well as the form and structure of a Malay culture-based Flipbook-assisted e-module for teaching procedural text writing to seventh-grade students. This study employed a Research and Development (R&D) approach using the Borg and Gall development model, modified into seven stages: (1) identifying potentials and problems, (2) data collection, (3) product design, (4) design validation, (5) design revision, (6) product testing, and (7) product revision. The research participants included subject-matter experts, media experts, language experts, Indonesian language teachers, and seventh-grade students from SMP Islam Kepenuhan and SMP Negeri 1 Kepenuhan. Data were collected through observations, interviews, questionnaires, and tests, and were analyzed using both quantitative and qualitative descriptive techniques. The findings indicate that the developed e-module possesses a well-organized and systematic form and structure. The validation results showed that the e-module was categorized as highly feasible, with an average validity score of 89.76%. The practicality test revealed that teachers' responses fell into the highly practical category, while students' responses across all classes indicated a very high level of acceptance, with percentages exceeding 90%. Furthermore, the effectiveness test demonstrated that the use of the e-module significantly improved students' procedural text writing skills. At SMP Islam Kepenuhan, the experimental class achieved an average learning gain of 12.00, which was higher than the control class average of 10.26. Similarly, at SMP Negeri 1 Kepenuhan, the experimental class obtained an average improvement of 13.12, compared with 10.14 in the control class. In conclusion, the Malay culture-based Flipbook-assisted e-module for teaching procedural text writing is valid, practical, and effective, making it suitable for use as an instructional material in Indonesian language learning for seventh-grade students.

Introduction

Education is essentially a continuous process that helps individuals cope with the various challenges they encounter throughout their lives (Sinaga et al., 2023). Through education, students are expected to develop the knowledge, skills, and attitudes necessary for everyday life. One of the essential skills that should be developed in Indonesian language learning is writing. Writing is a fundamental language competence because it enables students to develop

critical, logical, and systematic thinking skills in expressing ideas in written form (Heidari Tabrizi & Hoorijani, 2025; Hassan, 2023). One of the materials taught at the junior high school (SMP) level is procedural text, which contains systematic steps for achieving a specific goal. The teaching of procedural text writing aims not only to help students understand its structure and linguistic features but also to enable them to compose procedural texts in a coherent, clear, and communicative manner (Irawaty et al., 2024; Ermianto & Syamsi, 2026; Takdir et al., 2023; Serihartati & Purnawan, 2026; Ristati et al., 2024; Zhou, 2023).

However, the implementation of procedural text writing instruction in schools still faces several challenges (Halawa, 2026; Zai, 2023; Ermianto & Syamsi, 2026). Based on observations and interviews conducted at SMP Islam Kepenuhan and SMP Negeri 1 Kepenuhan, it was found that teachers still relied primarily on textbooks and simple printed modules, resulting in teacher-centered learning. The use of interactive digital learning materials has not been optimized, even though today's students are closely connected to digital technology (Alenezi et al., 2023; Mhlongo et al., 2023; Zou et al., 2025; Alenezi, 2023). This condition has led to low student interest and learning motivation, which in turn affects their ability to compose procedural texts according to the appropriate structure and linguistic conventions. Furthermore, students' average writing achievement remains below the Learning Objective Achievement Criteria (KKTP) (Liu et al., 2024).

These findings indicate the need for innovation in developing instructional materials that accommodate the characteristics of learners in the digital era. One promising alternative is an e-module assisted by a *flipbook*. An e-module, or electronic module, is an independent learning resource equipped with various interactive visual media, such as tutorial videos and animations, enabling students to learn independently, become more creative, and develop critical thinking skills through learning materials accessible via interactive hyperlinks (Charlina et al., 2022; Rahim et al., 2022; Fernandes & Pathak, 2026). E-modules are systematically organized electronic teaching materials that can be accessed through various digital devices. The use of a *flipbook* as the presentation medium provides students with a reading experience similar to that of a printed book while incorporating multimedia features that enhance student engagement during learning (Hartoyo et al., 2024; Agustini et al., 2022; Hamidah & Asrohah, 2025; Anyawati et al., 2026; Elfina et al., 2023; Islam et al., 2026).

In addition to utilizing digital technology, Indonesian language learning should also incorporate local cultural values as contextual learning resources. Culture can be understood as the collective product of human creativity, feelings, and intentions that evolve into traditions and become the identity of a social community (Koentjaraningrat, 2009; Pohan et al., 2024; Li et al., 2023). According to Setiadi et al. (2006), culture is a complex system consisting of various elements that function to fulfill the needs of society. Integrating Malay culture into procedural text materials enables students to learn text structures through activities closely related to their daily lives. In this study, Malay culture is represented through procedural texts describing the preparation of traditional dishes from the Kepenuhan community, such as *asam mamam*, *ujak noneh*, *pokasam ikan lemak*, and *kokek asam durian*. The integration of local cultural content not only helps students understand the learning materials more meaningfully but also fosters appreciation for regional cultural heritage as part of preserving Malay culture.

The researcher identified several previous studies relevant to this research. The first study, entitled "*Developing Interactive Teaching Materials for Writing Procedural Texts for Seventh-Grade Junior High School Students Using the 4-D Development Model*," was conducted by Rosmianti, Munirah, and Rahim in 2022 and published in *Onoma: Pendidikan, Bahasa, dan*

Sastra. The findings indicated that the developed instructional materials met the criteria of validity, practicality, and effectiveness, making them suitable for use in Indonesian language instruction. The study demonstrated that interactive teaching materials could improve students' procedural text writing skills.

The second study, entitled "*Developing an E-Module Based on Flip PDF and Canva for Geometry Transformation Materials*," was conducted by Kurniawan, Yuniarta, and Kriswandani in 2023 and published in *PRISMA: Jurnal Pendidikan Matematika*. The results showed that the developed e-module was valid, practical, and suitable for use as a digital learning resource. These findings suggest that digital technology can enhance the quality of instructional media and facilitate students' understanding of learning materials.

The third study, entitled "*Developing an Interactive Canva-Based E-Module for Procedural Text Materials*," was conducted by Maulinda, Megawati, and Rafidah in 2024 and published in the *SAP (Susunan Artikel Pendidikan) Journal*. The study found that the e-module achieved a "highly feasible" category based on expert validation, received very positive responses from both teachers and students, and effectively improved students' procedural text writing skills. This research further confirms that interactive digital e-modules can significantly enhance student learning outcomes in Indonesian language education.

Based on these previous studies, it can be concluded that the development of digital instructional materials in the form of e-modules has been proven to improve both the quality of instruction and students' writing skills. However, studies specifically focusing on the development of a Malay culture-based procedural text writing e-module assisted by a *Flipbook* for seventh-grade students remain very limited. Therefore, the novelty of this study lies in integrating Malay culture through procedural texts featuring traditional local foods into a *Flipbook*-assisted digital e-module while evaluating its validity, practicality, and effectiveness as instructional material for procedural text writing. Accordingly, this study aims to describe the development procedures of a Malay culture-based procedural text writing e-module assisted by a *Flipbook* for seventh-grade students and to describe the form and structure of the developed e-module. Furthermore, the study seeks to produce an e-module that meets the criteria of validity, practicality, and effectiveness, making it suitable for use as instructional material in Indonesian language learning, particularly for teaching procedural text writing.

Method

This study employed the Research and Development (R&D) method based on the Borg and Gall development model, which was simplified by Sugiyono (2016) into seven stages: (1) identifying potential and problems, (2) data collection, (3) product design, (4) design validation, (5) product revision, (6) product testing, and (7) final revision to produce the final product. This model was selected because it provides a systematic procedure for developing, validating, and refining instructional products, thereby producing an e-module that is valid, practical, and effective.

The research was conducted at SMP Islam Kepenuhan and SMP Negeri 1 Kepenuhan, Rokan Hulu Regency. These research sites were selected based on the need to develop Malay culture-based instructional materials that align with the characteristics of the students and the local community. The research participants consisted of expert validators, teachers, and seventh-grade students. Product validation was carried out by nine validators, comprising three subject-matter experts, three media experts, and three language experts. The product trial involved Indonesian language teachers and seventh-grade students from SMP Islam Kepenuhan and

SMP Negeri 1 Kepenuhan. During the limited trial phase, a control class was used, while the field trial employed an experimental class to evaluate the applicability of the developed product in classroom instruction.

The research data consisted of both qualitative and quantitative data. According to Sugiyono (2022), qualitative data consist of descriptions, opinions, or suggestions used to explain a phenomenon, whereas quantitative data consist of numerical values that can be analyzed statistically. Qualitative data were obtained through interviews, observations, and feedback from the expert validators throughout the product development process. Quantitative data were collected through teacher and student needs assessment questionnaires, expert validation questionnaires, teacher and student response questionnaires, and procedural text writing tests administered during the pretest and posttest. The research instruments included interview guidelines, observation sheets, teacher and student needs analysis questionnaires, material, media, and language validation questionnaires, teacher and student response questionnaires, and procedural text writing tests. These instruments were used to collect data regarding user needs, product feasibility, practicality, and the effectiveness of the developed e-module.

Data were analyzed using both descriptive quantitative and descriptive qualitative methods. The results of expert validation and teacher and student responses were analyzed using percentage calculations to determine the feasibility and practicality categories of the product. The test results were analyzed using normality and homogeneity tests as prerequisite analyses. Subsequently, hypothesis testing was conducted to determine the effectiveness of the e-module in improving students' procedural text writing skills. Qualitative data, consisting of comments and suggestions from the validators, were analyzed descriptively and used as the basis for revising and refining the product before its implementation in the product trial stage.

Result and Discussion

Development of a Malay Culture-Based Procedural Text Writing E-Module Assisted by *Flipbook*

This study produced a Malay culture-based procedural text writing e-module assisted by *Flipbook* for seventh-grade junior high school students. The product was developed using the Research and Development (R&D) model proposed by Borg and Gall, which was simplified into seven stages: identifying potential and problems, data collection, product design, design validation, product revision, product testing, and final product revision. These stages were carried out systematically to ensure that the resulting product met the criteria of validity, practicality, and effectiveness as an instructional resource for Indonesian language learning.

The first stage involved identifying the potential and existing problems through observations, interviews, and questionnaires administered to teachers and students at SMP Islam Kepenuhan and SMP Negeri 1 Kepenuhan. The findings revealed that procedural text writing instruction was still dominated by the use of textbooks and printed modules, resulting in conventional teacher-centered learning. The use of interactive digital instructional materials remained very limited, even though students were already familiar with digital devices in their daily lives. Consequently, students demonstrated low learning motivation and limited ability to write procedural texts according to the required structure and linguistic conventions. Furthermore, the instructional materials used had not integrated local culture as a learning resource, making the learning process less contextual and less relevant to students' everyday experiences. The second stage involved data collection as the foundation for product development. The instructional materials were designed in accordance with the Learning Outcomes (CP) for

seventh-grade Indonesian language learning and the characteristics of junior high school students. To strengthen contextual learning, the procedural text materials incorporated elements of Kepenuhan Malay culture through procedural texts describing the preparation of traditional local dishes, namely *asam maman*, *ujak noneh*, *pokasam ikan lemak*, and *kokek asam durian*. These materials were selected to enable students not only to learn the structure and linguistic features of procedural texts but also to recognize, appreciate, and preserve Malay culture as an important part of their regional identity.

The third stage focused on product design. The e-module was created using Canva to produce an attractive visual layout and was subsequently converted into a *Flipbook* format, allowing it to be accessed digitally through computers and smartphones. The e-module was systematically organized to include a cover page, preface, user guide, learning outcomes, learning objectives, concept map, instructional materials, examples of Malay culture-based procedural texts, practice exercises, evaluations, a glossary, and references. In addition to textual content, the e-module incorporated images, illustrations, icons, and multimedia hyperlinks to facilitate students' understanding of the instructional materials. The *Flipbook* format provides a reading experience similar to that of a printed book while offering a more interactive interface that enhances students' interest and engagement in learning.

The fourth stage involved design validation. The validation process was conducted by nine validators, consisting of three subject-matter experts, three media experts, and three language experts. The purpose of this stage was to ensure that the product met the required standards in terms of content, media presentation, and language before being implemented in classroom instruction. In addition to completing the validation instruments, the validators also provided constructive comments and suggestions for improving the product.

Based on the validation results, several revisions were made to the e-module. These improvements included enhancing color contrast to create a more attractive appearance, adjusting font sizes in several sections to improve readability, and refining the use of Indonesian Spelling (Ejaan Bahasa Indonesia), particularly regarding capitalization and the preface. These revisions were implemented according to the validators' recommendations, thereby improving the overall quality of the product and ensuring that it met the established feasibility standards for classroom use.

The validation results indicated that the Malay culture-based procedural text writing e-module assisted by *Flipbook* received excellent evaluations from all validators. Regarding the content aspect, the e-module achieved a feasibility score of 90.67%, which falls into the "highly feasible" category. This result indicates that the instructional materials were well aligned with the learning outcomes, learning objectives, characteristics of seventh-grade students, and the procedural text writing competencies specified in the curriculum. Furthermore, the integration of Malay culture through instructional materials on *asam maman*, *ujak noneh*, *pokasam ikan lemak*, and *kokek asam durian* was considered effective in providing a more contextual and meaningful learning experience closely related to students' daily lives.

In terms of the media aspect, the e-module obtained a feasibility score of 89.27%, also classified as "highly feasible." This evaluation indicates that the visual design, layout, color selection, use of images, navigation system, and implementation of the *Flipbook* application met the criteria for high-quality instructional media. The *Flipbook* format enables students to access the instructional materials conveniently in digital form while providing a more interactive learning experience than conventional printed materials. This advantage makes the e-module more engaging and enhances student participation throughout the learning process.

Regarding the language aspect, the validation results yielded a feasibility score of 89.33%, which also falls into the "highly feasible" category. These findings indicate that the language used in the e-module complies with standard Indonesian language conventions, is communicative, and is easily understood by students. The use of simple sentences appropriate to students' cognitive development facilitates a more effective understanding of the learning materials. Nevertheless, the validators provided several suggestions concerning spelling, punctuation, and the consistency of terminology, all of which were incorporated into the design revision stage. Overall, the results of the e-module design validation are presented in Table 1.

Table 1. Results of the E-Module Design Validation

Validation Aspect	Percentage (%)	Category
Material Expert	90.67	Very Feasible
Media Expert	89.27	Very Feasible
Language Expert	89.33	Very Feasible
Average	89.76	Very Feasible

Based on Table 1, the average validation percentage reached 89.76%, which falls into the "highly feasible" category. These results indicate that the developed e-module has met the feasibility criteria in terms of content, media presentation, and language, making it suitable for use in the learning process after revisions based on the validators' recommendations. The high validation score suggests that the e-module was designed in accordance with the instructional needs of procedural text writing and has the potential to serve as an alternative digital teaching resource that supports local culture-based learning.

These validation results are consistent with the view that high-quality instructional materials should meet the criteria of content, presentation, and language to effectively help students achieve the intended learning objectives. Therefore, the Malay culture-based procedural text writing e-module assisted by *Flipbook* was declared suitable to proceed to the design revision stage before being implemented in the product trial.

The fifth stage involved design revision. This stage was conducted after the e-module had been evaluated by subject-matter experts, media experts, and language experts. The purpose of the revision was to improve the product based on the comments and suggestions provided by the validators so that the e-module would satisfy the requirements of content feasibility, media presentation, and language quality before being tested with users. Revision is an essential component of research and development because it enhances product quality to better meet instructional needs and student characteristics.

Based on the feedback from the subject-matter experts, several revisions were made to the content of the e-module, including improving the organization of the instructional materials to make them more systematic, adapting the procedural text examples to better reflect the characteristics of Malay culture, and revising several terms to make them easier for students to understand. In addition, the instructional materials were aligned more closely with the learning outcomes and learning objectives, thereby strengthening the relationship between competencies, instructional content, and assessment. These improvements were intended to ensure that the materials were not only conceptually accurate but also capable of facilitating students' understanding of the structure and linguistic features of procedural texts.

The revisions based on the media experts' recommendations focused on the visual design and usability of the e-module. Improvements included refining the layout, applying a more harmonious color scheme, enhancing image quality, standardizing font sizes, and improving

the navigation features within the *Flipbook* to make it more user-friendly. These revisions were intended to increase the attractiveness of the instructional media while providing students with a more comfortable and engaging learning experience.

Meanwhile, revisions based on the language experts' evaluations included correcting spelling, punctuation, word choice, and sentence structure to comply with the General Guidelines for Indonesian Spelling (Pedoman Umum Ejaan Bahasa Indonesia). Several sentences considered less effective were simplified to improve clarity and readability for seventh-grade students. In addition, terminology was standardized throughout the e-module to ensure consistency.

All suggestions from the validators were incorporated into the revision process, resulting in an improved version of the e-module compared to the initial design. These revisions did not alter the core instructional content but focused on enhancing the quality of the content, visual presentation, and language to improve the product's overall suitability for classroom use. After completing the design revision stage, the e-module was considered ready for product testing to evaluate its practicality and effectiveness in teaching Malay culture-based procedural text writing.

The sixth stage consisted of product testing, which aimed to determine the practicality and effectiveness of the e-module in teaching procedural text writing to seventh-grade students. The product trial was conducted at SMP Islam Kepenuhan and SMP Negeri 1 Kepenuhan, involving Indonesian language teachers and seventh-grade students as the users of the developed product.

The practicality of the e-module was assessed through teacher and student response questionnaires administered after the implementation of the e-module in classroom instruction. The evaluation covered aspects such as ease of use, presentation of instructional materials, media design, usefulness of the e-module, and the implementation of the learning activities.

The teacher response questionnaires indicated that the e-module received very positive evaluations from teachers at both schools. The teacher from SMP Islam Kepenuhan awarded the e-module a score of 68, corresponding to 90.67%, while the teacher from SMP Negeri 1 Kepenuhan gave a score of 69, equivalent to 92.00%. Both results fall into the "highly practical" category, indicating that the e-module is easy to use, meets instructional needs, and is appropriate for implementation in Indonesian language learning. The teachers also reported that the systematic presentation of the materials, the attractive *Flipbook* interface, and the integration of Malay cultural content effectively supported the teaching of procedural text writing.

Similarly, the student response questionnaires demonstrated very positive feedback. In Class VIIA of SMP Islam Kepenuhan, the e-module received a score of 94.87%, categorized as "highly needed." In Class VIIB of the same school, the e-module obtained 92.84%, also categorized as "highly needed." At SMP Negeri 1 Kepenuhan, Class VII.1 awarded the e-module 94.72%, while Class VII.2 gave 94.30%, both falling into the "highly needed" category. Overall, student responses across all four classes exceeded 90%, consistently placing the e-module in the "highly needed" category.

These findings indicate that the Malay culture-based procedural text writing e-module assisted by *Flipbook* possesses a very high level of practicality. The overwhelmingly positive student responses demonstrate that the e-module successfully addresses students' learning needs through its systematic presentation of instructional materials, attractive visual design, ease of use, and integration of Malay cultural content, making the learning experience more contextual

and meaningful. Therefore, the e-module is considered suitable for use as a digital instructional resource in teaching procedural text writing to seventh-grade students.

Table 2. Results of the Student Needs Analysis by Class

Class	Percentage (%)	Category
Class VIIA, SMP Islam Kepenuhan	94.87	Highly Needed
Class VIIB, SMP Islam Kepenuhan	92.84	Highly Needed
Class VII.1, SMP Negeri 1 Kepenuhan	94.72	Highly Needed
Class VII.2, SMP Negeri 1 Kepenuhan	94.30	Highly Needed

This study produced a Malay culture-based Flipbook-assisted e-module for teaching procedure text writing to seventh-grade junior high school students. The product was developed using the Research and Development (R&D) model of Borg and Gall, simplified into seven stages: identifying potential and problems, data collection, product design, design validation, design revision, product testing, and final product revision. These stages were carried out systematically to ensure that the e-module met the criteria of validity, practicality, and effectiveness as a learning resource for Indonesian language instruction.

The first stage involved identifying potential and problems through observations, interviews, and questionnaires administered to teachers and students at SMP Islam Kepenuhan and SMP Negeri 1 Kepenuhan. The findings revealed that instruction in writing procedure texts was still dominated by textbooks and printed modules, resulting in conventional teacher-centered learning. Interactive digital teaching materials were rarely used, despite students' familiarity with digital technology. Consequently, students showed low learning motivation and had difficulty composing procedure texts according to the appropriate structure and linguistic conventions. Furthermore, existing teaching materials had not incorporated local culture, making learning less contextual.

The second stage involved data collection as the basis for product development. The instructional content was designed according to the Grade VII Indonesian Language Learning Outcomes and students' characteristics. To strengthen contextual learning, the procedure texts featured traditional Malay dishes from Kepenuhan, including *asam mamam*, *ujak noneh*, *pokasam ikan lemak*, and *kokek asam durian*. These materials were intended not only to teach the structure and language features of procedure texts but also to introduce, preserve, and promote Malay cultural heritage.

The third stage was product design. The e-module was created using Canva and then converted into a Flipbook format, allowing access via computers and smartphones. The module included a cover, preface, user guide, learning outcomes, learning objectives, concept map, instructional materials, Malay culture-based procedure text examples, exercises, evaluations, glossary, and references. In addition to textual content, it incorporated illustrations, icons, and multimedia links to facilitate understanding. The Flipbook format provided an engaging reading experience similar to a printed book while offering interactive digital features.

The fourth stage involved design validation by nine validators consisting of three material experts, three media experts, and three language experts. The purpose of this stage was to ensure the product's feasibility in terms of content, media design, and language before classroom implementation. Validators also provided suggestions for improvement.

Following validation, several revisions were made, including improving color contrast, adjusting font sizes, and refining the use of Indonesian spelling and capitalization. These revisions enhanced the overall quality of the product without changing its instructional content.

Validation results indicated that the e-module received excellent evaluations from all experts. The material aspect achieved 90.67%, categorized as very feasible, indicating alignment with curriculum objectives, learning outcomes, Grade VII student characteristics, and procedure text materials. The integration of Malay cultural content was considered capable of providing more contextual and meaningful learning experiences.

The media aspect obtained 89.27%, also categorized as very feasible, demonstrating that the visual design, layout, color selection, images, navigation, and Flipbook features met the standards of high-quality instructional media. The digital Flipbook format was considered attractive and effective in increasing student engagement.

The language aspect received 89.33%, categorized as very feasible, indicating that the language used was communicative, grammatically accurate, and appropriate for Grade VII students. Minor revisions were made to improve spelling, punctuation, and terminology consistency.

Overall, the average validation score reached 89.76%, placing the e-module in the very feasible category. These findings indicate that the product satisfied the requirements of content quality, media presentation, and language use, making it suitable for implementation after minor revisions. The high validation scores suggest that the e-module was successfully designed to meet the instructional needs of teaching procedure text writing while incorporating local cultural values.

The fifth stage consisted of design revision based on feedback from the validators. Improvements included reorganizing instructional content, refining examples of Malay culture-based procedure texts, enhancing layout and visual presentation, improving image quality, simplifying language, and ensuring compliance with Indonesian spelling standards. These revisions further improved the product's usability and instructional quality.

The sixth stage was product testing, conducted to evaluate the practicality and effectiveness of the e-module. Practicality was measured through teacher and student response questionnaires.

Teacher responses were highly positive. Teachers at SMP Islam Kepenuhan awarded a score of 68 (90.67%), while teachers at SMP Negeri 1 Kepenuhan awarded 69 (92.00%), both categorized as very practical. Teachers reported that the e-module was easy to use, systematically organized, visually attractive, and highly supportive of teaching procedure text writing. They also appreciated the integration of Malay culture as a meaningful learning context.

Student responses were equally positive. The percentages obtained were 94.87% for Class VIIA and 92.84% for Class VIIB at SMP Islam Kepenuhan, while Classes VII.1 and VII.2 at SMP Negeri 1 Kepenuhan achieved 94.72% and 94.30%, respectively. All results fell within the highly needed category, indicating that students considered the e-module attractive, easy to understand, useful for independent learning, and capable of making learning more contextual through the integration of Malay culture.

The effectiveness of the e-module was examined using pretests and posttests administered to both experimental and control groups at the two schools. Prior to hypothesis testing, normality and homogeneity tests were conducted.

At SMP Islam Kepenuhan, the control class obtained an average pretest score of 5.74 and a posttest score of 16.00, resulting in an average improvement of 10.26 points. The experimental class improved from 6.14 to 18.14, with an average increase of 12.00 points, demonstrating greater learning gains than the control group.

Similarly, at SMP Negeri 1 Kepenuhan, the control class improved from 5.86 to 16.00, yielding an average increase of 10.14 points, whereas the experimental class improved from 5.60 to 18.72, resulting in an average increase of 13.12 points. These findings indicate that students who used the e-module achieved greater improvements than those using conventional teaching materials.

Because the Shapiro–Wilk normality test showed significance values below 0.05, the data were not normally distributed. Homogeneity testing indicated that pretest data were homogeneous, while posttest data were not. Therefore, hypothesis testing was conducted using the Mann–Whitney U test.

The results demonstrated that the Asymp. Sig. (2-tailed) values at both schools were below 0.05, indicating significant differences between the experimental and control groups. Consequently, H_0 was rejected and H_1 was accepted, confirming that the Malay culture-based Flipbook-assisted e-module significantly improved students' procedure text writing skills compared with conventional teaching materials.

The effectiveness of the e-module can be attributed to several factors. Its systematic presentation of procedure text writing stages facilitated students' understanding of writing processes. The interactive Flipbook environment, integrating text, images, and digital navigation, enhanced students' motivation and engagement. Moreover, embedding Malay cultural contexts through traditional food preparation procedures made learning more meaningful while simultaneously fostering appreciation for local cultural heritage.

Based on the pretest-posttest results and statistical analyses, the e-module fulfilled the effectiveness criterion as a digital instructional resource. The significantly higher learning gains achieved by experimental classes demonstrate that the product effectively enhances seventh-grade students' ability to write procedure texts.

The seventh stage involved final product revision based on teacher feedback, student responses, and effectiveness results. After refinement, the final e-module met the characteristics of a high-quality digital teaching material. It not only presented instructional content aligned with curriculum learning outcomes but also integrated Malay culture into classroom learning, providing students with contextual and meaningful learning experiences. The interactive Flipbook format further enhanced accessibility, attractiveness, and students' independent learning.

Form and Structure of the Malay Culture-Based Flipbook-Assisted E-Module

The developed e-module is a Flipbook-based digital learning resource that can be accessed via computers and smartphones. It provides a reading experience similar to that of a printed book while incorporating interactive digital features that facilitate both independent and teacher-guided learning. Its design emphasizes instructional content, visual appeal, ease of use, and compatibility with Grade VII students' characteristics.

The e-module is organized into three main sections. The introductory section includes the cover, preface, table of contents, user guide, module identity, learning outcomes, learning

objectives, and concept map. The cover combines attractive colors with Malay cultural illustrations, while the user guide helps students navigate the module independently.

The main section contains instructional materials on writing procedure texts integrated with four traditional Kepenuhan Malay foods: *asam maman*, *ujak noneh*, *pokasam ikan lemak*, and *kokek asam durian*. Each topic introduces the traditional food, presents a model procedure text, analyzes its structure and linguistic features, and provides exercises and evaluations. This organization enables students to understand both theoretical concepts and practical writing skills within familiar cultural contexts.

The e-module also includes exercises and assessments aligned with learning objectives. Exercises reinforce students' understanding, while evaluations measure their mastery of procedure text writing competencies through progressively challenging activities.

The closing section contains a glossary and references. The glossary explains important terminology used throughout the module, while the references provide the academic sources supporting the instructional content.

Visually, the e-module features harmonious color schemes, relevant illustrations, readable fonts, balanced layouts, and intuitive navigation. The Flipbook platform enhances interactivity through page-turning effects, multimedia integration, and user-friendly navigation, creating an engaging and enjoyable learning experience.

Overall, the developed e-module possesses the essential characteristics of an effective digital learning resource: systematic organization, ease of use, attractive visual presentation, and alignment with instructional needs. Its integration of Malay cultural content represents its primary innovation, connecting academic learning with students' social and cultural environment. Consequently, the e-module serves not only as a tool for improving students' procedure text writing skills but also as a medium for introducing and preserving Malay cultural heritage among younger generations.



Figure 1. SMP Islam Kepenuhan



Figure 2. SMP N 1 Kepenuhan

Conclusion

Based on the findings of this study, the development of the Malay culture-based Flipbook-assisted e-module for teaching procedure text writing to seventh-grade students was carried out through seven stages: identifying potential and problems, data collection, product design, design validation, design revision, product testing, and final product revision. The validation results indicated that the e-module was categorized as *highly feasible* by material, media, and language experts, confirming its suitability for classroom implementation. The practicality test showed that teachers rated the e-module as *highly practical*, while students' responses indicated that it was *highly needed*. The effectiveness test further demonstrated that the e-module significantly improved students' procedure text writing skills. This was evidenced by the higher average learning gains achieved by the experimental classes compared to the control classes at both SMP Islam Kepenuhan and SMP Negeri 1 Kepenuhan. Moreover, the Mann–Whitney U test produced an Asymp. Sig. (2-tailed) value of less than 0.05, indicating that the use of the e-module had a statistically significant effect on students' procedure text writing ability. Therefore, the developed e-module can be concluded to be valid, practical, and effective for use in Indonesian language learning.

The e-module was systematically organized into three main sections: the introductory section, the main content section, and the closing section. It includes a cover page, preface, table of contents, user guide, module identity, learning outcomes, learning objectives, concept map, instructional materials, exercises, evaluations, glossary, and references. The instructional content integrates Malay culture through four traditional local foods—*asam maman*, *ujak noneh*, *pokasam ikan lemak*, and *kokek asam durian*. The systematic presentation of the materials, the interactive Flipbook format, and the incorporation of local cultural content make the e-module more engaging, contextual, and effective in enhancing students' procedure text writing skills while simultaneously contributing to the preservation of Malay cultural heritage through Indonesian language education.s

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