The Validity of the "Lingga Batik Introduction" E-Module Developed Using the ADDIE Model for Cultural Arts Learning with Local Wisdom Content

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ABSTRACT
This study aims to examine the validity level of the "Pengenalan Batik Lingga" e-module, developed using the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model in cultural arts learning based on local wisdom. The e-module was designed as an interactive digital medium incorporating Malay cultural values of the Riau Islands, particularly Lingga Batik motifs. The research employed a Research and Development (R&D) approach, with validations conducted by three experts: material, media, and language experts. The results showed significant improvements between the first and second validation stages. The average expert validation scores increased from 2.38 (not appropriate) to 4.25 (highly appropriate) for content, 2.28 to 4.00 for media, and 2.26 to 4.00 for language. The overall average increase of 77.5% indicates that the e-module meets the criteria of high validity and feasibility for instructional use. These findings reinforce the importance of developing digital learning media rooted in local culture to enhance learning relevance and motivation in the digital era.

Keywords: validity, Lingga Batik, e-module, ADDIE model, local wisdom

Validitas E-Modul "Pengenalan Batik Lingga" Berbasis Model ADDIE pada Pembelajaran Seni Budaya Bermuatan Kearifan Lokal

ABSTRAK
Penelitian ini bertujuan untuk menguji tingkat validitas e-modul "Pengenalan Batik Lingga" yang dikembangkan menggunakan model ADDIE (Analysis, Design, Development, Implementation, Evaluation) dalam pembelajaran Seni Budaya berbasis kearifan lokal. Produk e-modul ini dirancang sebagai media digital interaktif yang memuat nilai budaya Melayu Kepulauan Riau, khususnya pada motif Batik Lingga. Metode penelitian menggunakan Research and Development (R&D) dengan penilaian validasi oleh tiga ahli, yaitu ahli materi, ahli media, dan ahli bahasa. Hasil validasi menunjukkan peningkatan signifikan antara tahap pertama dan kedua. Rata-rata skor validasi ahli materi meningkat dari 2,38 (tidak sesuai) menjadi 4,25 (sangat sesuai), ahli media dari 2,28 menjadi 4,00, dan ahli bahasa dari 2,26 menjadi 4,00. Peningkatan rata-rata keseluruhan sebesar 77,5%, menandakan bahwa e-modul telah memenuhi kriteria sangat valid dan layak digunakan dalam pembelajaran. Temuan ini memperkuat pentingnya pengembangan media pembelajaran digital yang berakar pada budaya lokal guna meningkatkan relevansi dan motivasi belajar peserta didik di era digital.

***Kata kunci:** validitas, e-modul, Batik Lingga, model ADDIE, kearifan lokal*

INTRODUCTION

The development of information and communication technology has brought significant changes to education, particularly in instructional design, presentation, and evaluation. The digital era requires educators to effectively use technology to create innovative, adaptive, and context-specific learning processes. In line with the Merdeka Curriculum policy, learning is expected not only to focus on academic competencies but also to foster character, creativity, and an understanding of cultural values and local wisdom that reflect the nation's identity.

In this context, digital learning media have become a key component that can help teachers deliver materials in an engaging, interactive way. According to Mayer (2020), multimedia-based learning can enhance students' motivation and comprehension by integrating textual, visual, and audio-visual elements that complement one another. However, empirical evidence shows that many existing digital learning media remain generic and fail to highlight the cultural context of local communities. As a result, students often lack an emotional connection and contextual meaning in the learning materials.

Specifically, in Lingga Regency, Riau Islands Province, there exists a rich cultural heritage in the form of Batik Lingga motifs, which possess profound aesthetic and philosophical values. Motifs such as Pucuk Rebung, Tampuk Manggis, and Buah Padi reflect the noble values of the Malay community, symbolizing fertility, prosperity, and moral integrity. However, this cultural potential has not been fully utilized within educational settings, particularly in Arts and Culture learning at schools. Students may be familiar with batik in general, yet they lack understanding of the richness and philosophical meaning embedded in Batik Lingga as part of their own regional heritage.

Departing from this phenomenon, it is necessary to develop learning media that not only utilize technology but also integrate local wisdom to make learning more meaningful. One potential solution is the development of a digital e-module titled "Introduction to Batik Lingga", designed to be interactive and visually appealing. This e-module enables students to engage in self-directed learning, access materials flexibly, and explore cultural meanings through text, images, and interactive videos.

The development process employs the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) as proposed by Branch (2009). This model was selected because it provides a systematic and structured framework, from needs analysis and instructional design through product development, implementation, and evaluation. In this study, the primary focus is on the evaluation stage, specifically on product validation by content, media, and language experts. The validation aims to ensure that the developed e-module meets the criteria of content accuracy, visual design quality, linguistic clarity, and effectiveness as a digital learning medium grounded in local culture.

Validation is a crucial component of research and development (R&D) because it determines the degree of alignment between the developed product, user needs, and learning objectives (Sugiyono, 2019). As Reiser and Dempsey (2018) emphasize, the validity of instructional products is a key indicator of design quality that bridges theoretical principles and educational practice. Therefore, the validation of the "Introduction to Batik Lingga" e-module is expected to make a tangible contribution to the development of technology-based learning rooted in local wisdom and to serve as a model for innovative media development in regional schools.

Furthermore, this study is expected to strengthen local government efforts in preserving Malay cultural heritage through formal education. The integration of cultural values into digital media not only enhances students' cognitive and creative competencies but also nurtures a sense of pride and appreciation for regional culture and national identity. Hence, this study focuses on determining

validity, Lingga Batik, e-module, ADDIE model, local wisdom

the validity level of the "Introduction to Batik Lingga" e-module, developed through the ADDIE model, in the context of Arts and Culture learning that incorporates local wisdom in Lingga Regency, Riau Islands Province.

METHOD

This study employed a Research and Development (R&D) approach aimed at producing an instructional media product in the form of an e-module entitled "Introduction to Batik Lingga", which is valid, engaging, and suitable for use in Arts and Culture learning that incorporates local wisdom. The development process adopted the ADDIE model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation (Branch, 2009). This model was selected because it provides a systematic and user-oriented framework that ensures the learning product is theoretically and empirically tested. The study was conducted at SMA Negeri 2 Singkep during the odd semester of the 2025/2026 academic year, involving Grade X students in the Arts and Culture subject.

1. Analysis Stage

This stage began with a needs analysis of learning media through interviews and classroom observations involving teachers and students at SMA Negeri 2 Singkep. The analysis revealed that most teachers still relied on conventional media, such as textbooks and static presentations, while students demonstrated low interest in learning materials related to local culture. Therefore, there was a clear need for interactive, flexible, and contextual digital learning media that could facilitate self-directed learning and introduce the cultural values of the Malay community in the Riau Islands Province.

2. Design Stage

The design stage focused on constructing the content structure, selecting materials, and designing the user interface of the e-module. The structure of the e-module comprises six main sections: Home, Material, Motif Gallery, Learning Videos, Exercises, and Evaluation. The core material was compiled based on literature review and authentic sources on Batik Lingga obtained from the Department of Tourism and local batik artisans. Each section was designed to support self-directed learning by integrating the principles of self-instruction, self-contained, stand-alone, adaptable, and user-friendly (Depdiknas, 2008). The visual design considered the aesthetic characteristics of the Malay culture, employing warm color tones such as golden yellow, emerald green, and ocean blue, along with Malay ornamental motifs as decorative elements. This stage also included the creation of a storyboard and flowchart to represent the navigation flow and layout structure before being developed into a digital product.

3. Development Stage

At this stage, the designed prototype was transformed into a digital format using a combination of HTML, CSS (Tailwind CSS), and JavaScript. The web-based platform was chosen to ensure easy accessibility through various devices, including computers, laptops, and smartphones, without requiring additional installation.

Internal testing was conducted to ensure that all features functioned properly, including menu navigation, the batik motif gallery, batik-making tutorial videos, and the interactive quiz-based evaluation system. The developed e-module was then subjected to expert validation to assess its quality and feasibility from multiple perspectives.

4. Implementation Stage

The implementation stage was conducted on a limited trial basis at SMA Negeri 2 Singkep in *Arts and Culture* classes for Grade X students. The purpose of this trial was to gather initial feedback from teachers and students regarding usability, visual appeal, and content relevance. Although this study primarily focused on the validation phase, feedback from the limited implementation was

used to refine and improve the final version of the product, ensuring better readiness for future effectiveness testing.

5. Evaluation Stage

The evaluation stage involved expert validation, which consisted of three categories:

1) Content Experts, who evaluated aspects such as content accuracy, conceptual correctness, material coherence, and alignment with learning objectives.
2) Media Experts, who assessed visual design, navigation, interactivity, and interface consistency.
3) Language Experts, who reviewed linguistic accuracy, readability, and appropriateness of language style for students' comprehension level.

The instruments used consisted of validation sheets, observation sheets, and questionnaires. The validation sheets were employed to evaluate the quality of the e-module in terms of content, media, and language. Validation was carried out by three experts—material, media, and language—using a four-point Likert scale. Each expert received assessment forms aligned with their respective fields to ensure structured evaluation based on development principles

The validation instruments employed a Likert scale ranging from 1 to 5, with the following criteria.

Table 1
Likert Scale Criteria

Score Range	Validity Category
4.21-5.00	Very Valid
3.41-4.20	Valid
2.61-3.40	Fairly Valid
1.81-2.60	Less Valid
1.00-1.80	Invalid

The results of the assessments from the three validators were analyzed using descriptive quantitative analysis to determine the average scores and validity categories. Qualitative data in the form of feedback and comments from the validators were utilized as the basis for revising the product to ensure that the e-module met the criteria of validity and feasibility for instructional use.

Furthermore, the validation process also aimed to evaluate the relevance of the e-module content to local cultural values, the appropriateness of the visual design with Malay cultural characteristics, and the integration between technological and cultural elements within a cohesive learning framework. The final validation results served as the foundation for concluding the overall quality of the e-module in terms of content, media design, and language before proceeding to the next stages of practicality and effectiveness testing in future studies.

RESULT
1. Description of the e-Modul Product

The product developed in this research is an e-module titled "Introduction to Batik Lingga", a web-based interactive digital learning medium designed to support *Arts and Culture* learning that integrates local wisdom at SMA Negeri 2 Singkep. This e-module consists of six main menus: (1) Home, (2) Material, (3) Motif Gallery, (4) Learning Videos, (5) Exercises, and (6) Evaluation. The content structure is organized hierarchically so that students can learn independently, systematically, and progressively in accordance with the principle of self-instruction (Depdiknas, 2008).

The e-module interface is designed using a combination of gold, green, and ocean blue colors, symbolizing prosperity, harmony, and the resilience of Malay culture. Visual elements such as pucuk rebung (bamboo shoots) ornaments and traditional Malay carvings of Lingga are used as decorative features to strengthen local cultural identity.
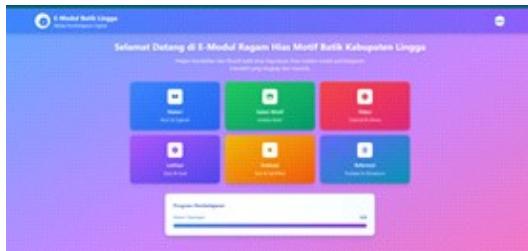
Figure 1
Home Page Display of the e_module

The main features of the e-module include text- and multimedia-based learning materials, a gallery of Batik Lingga motifs, and a documentary video depicting the batik-making process. The core material highlights three distinctive regional motifs "Pucuk Rebung, Tampuk Manggis, and Buah Padi" each accompanied by explanations of their underlying philosophies and the cultural values they represent.
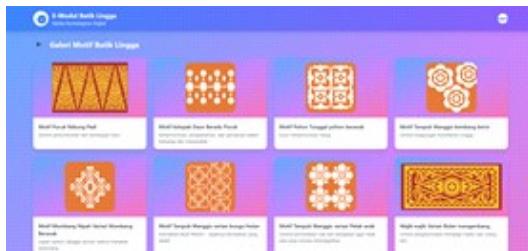

Figure 2
Batik Motif Gallery Page
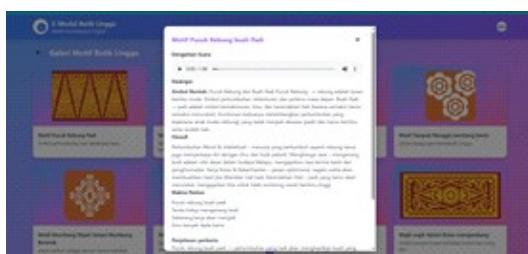
Figure 3
Batik Motif Gallery Pop-Up Page

The e-module is also equipped with video features, interactive quizzes that provide automatic feedback, and a digital evaluation menu to measure students' level of understanding. The evaluation system adopts the principle of assessment for learning, in which students are assessed not only based on their final outcomes but also on their self-directed learning processes.
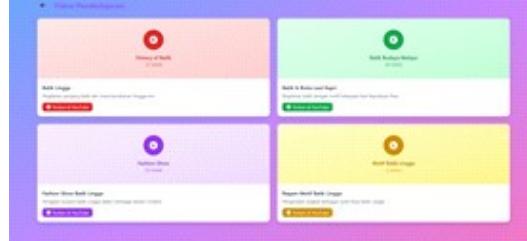

Figure 4
Video Page
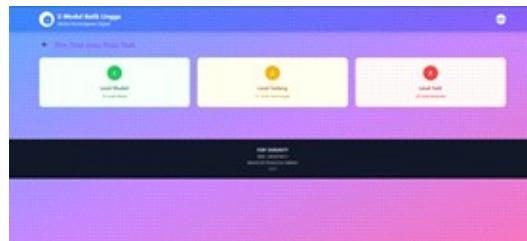
Figure 5
Quiz Page
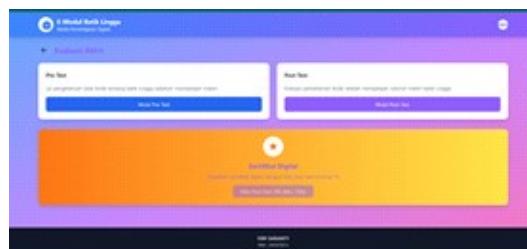
Figure 6
Evalution Page

The e-module serves as the main product validated by content, media, and language experts. The validation process was carried out in two stages, namely Stage I (pre-revision) and Stage II (post-revision) validation

2. Expert Validation Results

The validation was conducted by three categories of experts: content experts, media

experts, and language experts. Each expert provided an assessment based on content, visual design, and linguistic aspects using a five-point Likert scale, where 1 = Invalid and 5 = Very Valid.

The summary of the validation results from the three expert categories is presented in Table 2 below.

Table 2
Summary of the e-Modul Validation Result

Expert Category	Stage I	Stage II	Category
Content Expert	2.38	4.25	very valid
Media Expert	2.28	4.00	very valid
Language Expert	2.26	4.00	very valid
Average Score	2.31	4.08	very valid

Based on the validation results, the overall average score obtained in Stage II was 4.08, categorized as "Very Valid." This means that the e-module has met the standards of content, visual, and linguistic feasibility for use in the learning process.

DISCUSSION

In general, the improvement in validation scores during Stage II indicates that the product revisions made based on expert feedback were effective in enhancing the quality of the e-module.

a. Content Expert Validation

The content expert assessed the e-module in terms of conceptual accuracy, content completeness, and alignment with learning objectives. In Stage I, several aspects required clarification, such as the definition of motif terminology and the relationship between cultural values and batik philosophy. After revisions, the score increased from 2.38 to 4.25, indicating that the content of the e-module is now well-aligned with the Basic Competencies of the Arts and Culture subject.

These findings support the Instructional Alignment Theory proposed by Dick, Carey, & Carey (2015), which emphasizes the importance of coherence among objectives, content, and evaluation within instructional design.

b. Media Expert Validation

The media expert evaluated the e-module's visual layout, navigation, and interactivity. The visual aspect showed a significant improvement after color schemes and layouts were refined according to the principles of Cognitive Load Theory (Sweller, 2019), which states that visual design should minimize users' cognitive load.

The validator also appreciated the integration of Malay cultural elements, such as local ornaments and color schemes, which enhanced the aesthetic value and strengthened the cultural identity of the product. The validation score increased from 2.28 to 4.00, placing it in the "Very Valid" category.

c. Language Expert Validation

The language expert assessed linguistic use based on readability, clarity, and presentation style. The language used in the e-module was found to be communicative, effective, and appropriate for the comprehension level of senior high school students. Minor revisions were made to several technical terms to make them easier to understand. The validation score increased from 2.26 to 4.00, indicating that the e-module's language style is humanistic and contextually relevant.

The integration of findings from all three experts shows that the e-module meets the dimensions of content, media, and language validity comprehensively. With an overall rating of "Very Valid," the e-module is deemed suitable for implementation in culturally based learning environments.

These findings are consistent with the studies of Utami & Lestari (2021) and Fitriani & Pratama (2023), which state that digital learning media integrating local culture can enhance students' interest and participation in learning. Furthermore,

these results reinforce Mayer's (2020) Multimedia Learning Theory, which posits that the integration of text, images, and animation significantly improves knowledge retention and cognitive engagement.

The "Introduction to Batik Lingga" e-module is therefore not only valid in terms of academic and design aspects but also holds strategic cultural significance as a means of preserving Malay Lingga heritage through the integration of modern learning technology. This aligns with the spirit of the Merdeka Curriculum, which emphasizes contextual, creative, and value-based learning grounded in local wisdom.

CONCLUSION

This study aimed to develop and validate the "Introduction to Batik Lingga" e-module, designed using the ADDIE development model for the Arts and Culture subject that incorporates local wisdom values. The product was developed to provide an alternative learning medium that is interactive, engaging, and culturally relevant to students' local context.

The research findings showed that the overall average validation score from the content, media, and language experts was 4.08, categorized as "Very Valid." This indicates that the e-module has met the criteria of content accuracy, visual design quality, and linguistic feasibility, and is therefore considered suitable for use as a digital learning medium. The revision process based on expert feedback proved effective in improving the product's quality in terms of content structure, visual appeal, and language readability.

From a pedagogical perspective, the e-module provides a more autonomous and interactive learning experience. Students are able to understand the material progressively through a combination of text, images, videos, and digital exercises, all structured according to the principles of self-instruction and user-friendliness.

From a cultural perspective, the e-module introduces the noble values of Malay Lingga culture through the interpretation of traditional batik motifs such as *Pucuk Rebung* and *Tampuk Manggis*, fostering students' pride and appreciation for their local cultural heritage.

In conclusion, the "Introduction to Batik Lingga" e-module developed using the ADDIE model is highly valid and feasible as a digital learning medium for the *Arts and Culture* subject. This product not only enhances students' conceptual understanding and skills but also plays a significant role in the preservation of local wisdom through the integration of modern educational technology.

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