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Development of an Electronic Module for Jaipong Dance Stage Makeup in the Traditional Dance Student Day Program at SMA PGRI Plus Cibinong

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ABSTRACT

Limited availability of learning media for stage makeup has hindered students' understanding of the material. This study aimed to develop an electronic module (e-module) on stage makeup for Jaipong dancers and evaluate its feasibility, practicality, and effectiveness as a learning medium.

The study employed a research and development approach using the ADDIE model: Analyze, Design, Development, Implementation, and Evaluation. The participants were eleventh-grade students in the Traditional Dance Student Day program at SMA PGRI Plus Cibinong. Data were collected through expert validation questionnaires, one-to-one and small-group practicality questionnaires, and pre- and post-tests.

Following revision, validation scores improved from 93.75% to 98.75% for Material Expert I, from 93.75% to 100% for Material Expert II, and from 95.71% to 100% for the media expert. Practicality scores were 85.71% in the one-to-one trial and 88.57% in the small-group trial; both were classified as highly practical. The effectiveness assessment yielded an N-Gain score of 0.81, which falls within the high category.

These findings indicate that the Jaipong Dancer Stage Makeup e-module is feasible, highly practical, and effective as a learning medium for students in the Traditional Dance Student Day program.

1. Introduction

Education plays a central role in developing human resources. Through appropriate learning, individuals can acquire the knowledge needed to prepare for future life. Nevertheless, student interest in learning has been declining because learning is often perceived as unengaging, which calls for learning strategies capable of attracting students' attention (Zahara et al., 2025). One strategy teachers can adopt to make learning more enjoyable and to raise student interest is the use of digital media. Digital transformation encourages teachers to adjust their strategies through the development of digital-based learning media. In this era, the teacher's role becomes crucial not only as an instructor but also as a facilitator, innovator, and mediator in integrating technology into the learning process (Hartati & Ermanto, 2025).

Although technology has begun to develop, many schools have not yet applied or optimized it. Learning processes today largely still rely on traditional, lecture- and textbook-based methods that often fail to accommodate the diverse needs of students. In fact, the current generation is already accustomed to interactive visual content, so traditional learning tends to feel monotonous and can lower student interest (Zahara et al., 2025). An electronic module (e-module) is one form of learning media that can address this problem. According to Triyono (2021), an e-module is a form of learning material presentation arranged systematically according to a particular curriculum and delivered in electronic format through a multimedia approach that combines text, images, video, animation, and audio to enrich students' learning experience. In simple terms, an e-module is an independent

teaching material arranged systematically in digital format, so that it functions not only as a learning medium but also as interactive teaching material capable of improving the effectiveness of students' learning experience. Based on this understanding, an e-module is understood not merely as electronic teaching material but also as a learning medium that continues to evolve alongside the growing use of digital technology. The development of digital media has made e-modules increasingly used because they can present learning material systematically, interactively, and in an easily accessible way. Supported by advances in science and technology, e-modules can be equipped with instructional videos, animation, images, and practice questions that make it easier for students to understand the material (Kismiati, 2020). The use of e-modules as interactive and easily accessible electronic teaching materials has implications for increasing students' active participation in learning. The use of e-modules as independent teaching material encourages students to more actively review knowledge gained at school independently and interactively. This can develop students' attitudes and knowledge according to their individual abilities, making learning more meaningful and enjoyable (Idayanti & Suleman, 2024).

The application of e-modules as independent teaching material is relevant to the learning needs at SMA PGRI Plus Cibinong, particularly in the Traditional Dance Student Day program. This program is designed to develop students' practical skills through practice-based learning, with the main goal of equipping students with independent skills that can be useful after they graduate. Accordingly, students are trained to practice independently, including within the Traditional Dance Student Day program. The Traditional Dance Student Day program covers several dance-related competencies, one of which is stage makeup. In every performance activity, dancers are required to apply their own makeup independently, covering not only facial makeup but also hairstyling and costume. The dance most frequently performed in this program is Jaipong, which originates from West Java. Jaipong dance is characterized by an energetic, cheerful, and agile quality, so the makeup applied tends to use bold colors that match the costume worn (Putri et al., 2025). Makeup for dancers functions as an element that emphasizes the expression and emotion displayed by the dancer, so that an appropriate makeup technique is required in stage-makeup learning, particularly within the Traditional Dance Student Day program.

Stage-makeup learning in the Traditional Dance Student Day program is considered not yet optimal. This is because the supervising teacher focuses more on teaching dance movement, while stage-makeup instruction has not been delivered systematically. Stage-makeup learning has been taught before, but its implementation remains very limited because it is only conducted once per semester with a short duration and has not been supported by teaching media that students can use independently. As a result, many students seek learning resources independently through dance studios outside school or tutorial videos on social media. This condition makes learning less effective because students' abilities and knowledge become uneven. In addition, the Traditional Dance Student Day program at SMA PGRI Plus Cibinong does not yet have a dedicated learning medium that systematically discusses Jaipong dancer stage makeup. This condition causes students difficulty in obtaining structured learning guidance, while the supervising teacher also experiences limitations in delivering the material optimally because learning has focused only on practice. Therefore, a learning medium is needed that can help students learn independently while also serving as a companion medium for teachers in the learning process.

A preliminary survey conducted with 33 students of the Traditional Dance Student Day program found that most students (67%) had more than one year of dancing experience, with 30% having more than two years of experience. However, in terms of understanding of basic stage-makeup techniques, most students fell into the moderately informed (43%) and slightly informed (27%) categories, and specifically for Jaipong stage makeup, more than 40% of students reported little or no understanding. This indicates that performance experience has not been fully matched by mastery of stage-makeup technique. The stage-makeup aspects most frequently considered difficult by students were shaping the eyebrows (60%), followed by shading and contouring (33%), selecting the appropriate makeup colors for Jaipong (30%), applying false eyelashes (27%), and creating long-lasting makeup. The main obstacles students face when applying makeup are a lack of tools or cosmetics (53%), a short amount of time for makeup application, and a lack of guidance or understanding of the makeup steps in

sequence (47%). These data indicate that students need guidance that is more systematic and easily accessible.

Regarding learning media, most students preferred video tutorials, direct demonstration, and a combination of media such as e-modules. The features most needed in an e-module were complete steps accompanied by illustrations, a list of tools and cosmetics along with their functions, and makeup tips for dancers. All students also stated that an e-module could help improve their ability according to their individual level of competence.

Previous studies also support the use of e-modules in makeup-related learning. Vebibina et al. (2023), in a study titled the development of a flipbook-maker-based e-module to improve the learning outcomes of cosmetology students at Universitas Negeri Medan, found that the developed e-module was highly feasible for use as a learning medium, as evidenced by media-expert validation of 86% and material-expert validation of 83%, both in the highly feasible category.

Based on the description above, it can be concluded that although students already have sufficient dancing experience, their understanding of stage-makeup technique, particularly for Jaipong dance, still needs to be improved. Various technical difficulties and obstacles in applying makeup indicate a need for a learning medium that is more systematic, practical, and easily accessible. Previous research findings also demonstrate that e-modules are a feasible, practical, and effective medium for improving learning outcomes in the field of cosmetology. Therefore, the development of a Jaipong dancer stage-makeup e-module can be a solution for improving student understanding.

2. Research Design and Methodology

This study employed a Research and Development (R&D) design. According to Sugiyono (2019), the R&D method is a research method used to produce a product while simultaneously testing its effectiveness, so that this method focuses not only on producing a product but also on the validation process to ensure the product is feasible to use. This study used the ADDIE development model, comprising five stages: Analyze, Design, Development, Implementation, and Evaluation. The ADDIE model was selected because its stages are systematic and provide room for evaluation and revision at every stage, allowing continuous improvement based on the evaluation obtained.

The research was conducted at SMA PGRI Plus Cibinong, within the Traditional Dance Student Day program, beginning with needs analysis in November 2025, with the e-module development itself carried out from June to July 2026.

At the Analyze stage, the researcher identified learning needs through observation and questionnaire distribution. Observation was carried out during the researcher's teaching-practice activity, during which it was found that no learning resource yet existed for Jaipong dancer stage makeup. A needs questionnaire was distributed via Google Form to eleventh-grade students of the Traditional Dance Student Day program, involving 33 respondents, to determine students' needs and characteristics regarding the material to be developed.

At the Design stage, the researcher arranged the initial design of the product to be developed, namely the Jaipong Dancer Stage Makeup e-module. The e-module content covers the history, characteristics, and supporting elements of Jaipong dance, as well as the definition, tools and materials, and procedures of dancer makeup. The design stage began with compiling a storyboard describing the content of the e-module, along with the collection of material from various sources, including e-books, articles, research journals, and personal documentation.

At the Development stage, the e-module was produced using the Canva application. The researcher assembled the product by adding elements such as text, illustrations, images, and hyperlinked videos. Hyperlinks were embedded to facilitate navigation between pages and to access videos from YouTube. All content and elements were arranged in a structured manner to be aesthetically appealing. After the product was designed, it was validated by two material experts and one media expert using five-point Likert-scale questionnaires. The material experts were a lecturer from the Cosmetology Study Program at Universitas Negeri Jakarta and the supervising teacher of the Traditional Dance Student Day program, while the media expert was a lecturer from

the Informatics and Computer Engineering Education Study Program at Universitas Negeri Jakarta. Revisions were made based on the experts' comments and suggestions.

At the Implementation stage, the validated and revised e-module was tested with students of the Traditional Dance Student Day program at SMA PGRI Plus Cibinong. The implementation was carried out in stages: a one-to-one test involving three students representing high, moderate, and low ability, followed by a small-group test involving eight students to determine the product's practicality. Afterward, an effectiveness test was conducted with 22 students, who were given a pre-test before learning and a post-test after studying the e-module, to determine the e-module's effectiveness in improving learning outcomes.

At the Evaluation stage, the researcher analyzed the data obtained during the development process, including the results of material- and media-expert validation, the practicality test, and the effectiveness test. Based on this analysis, the researcher drew conclusions regarding the level of validity, practicality, and effectiveness of the e-module as a learning medium for Jaipong dancer stage makeup.

The instruments used in this study consisted of a needs-analysis questionnaire, material- and media-expert validation sheets, a practicality questionnaire, and an effectiveness test. The material-expert validation instrument comprised 16 items covering three aspects (content feasibility, presentation of material, and language), while the media-expert validation instrument comprised 14 items covering six aspects (module design, self-instruction, self-containment, stand-alone use, adaptiveness, and user-friendliness). The student practicality instrument comprised 14 items covering five aspects (ease of use, efficiency, attractiveness, readability, and usefulness). The effectiveness instrument consisted of ten multiple-choice items spanning cognitive levels C1 to C4, developed based on the material presented in the e-module.

Quantitative questionnaire scores were converted into percentages using the formula NP = R/SM × 100%, where NP is the percentage sought, R is the score obtained, and SM is the maximum possible score. Following the interpretation criteria adapted from Sugiyono (2022), percentages of 81-100% were categorized as highly feasible or highly practical, 61-80% as feasible or practical, 41-60% as fairly feasible or fairly practical, 21-40% as less feasible or less practical, and 0-20% as very unfeasible or very impractical. Effectiveness was analyzed using the N-Gain formula, comparing pre-test and post-test scores, with the results interpreted according to Hake (1999): a score of 0.70 or higher was categorized as high, 0.30-0.69 as moderate, and below 0.30 as low.

3. Findings and Discussion

a. Findings

Product Development Results

Analyze. Observation confirmed that no dedicated learning resource yet existed for Jaipong dancer stage makeup within the Traditional Dance Student Day program at SMA PGRI Plus Cibinong. The needs questionnaire distributed to 33 students showed that 58% of students still had a low understanding of Jaipong stage makeup, while 73% of students stated that a complete, step-by-step makeup guide was the feature most needed in an e-module. Most students also stated that an e-module could help improve their ability to learn stage makeup. These findings indicated a need for a learning medium that presents material systematically, interactively, and accessibly to support independent learning.

Design. At this stage, the researcher compiled the initial design of the product to be developed, namely the Jaipong Dancer Stage Makeup e-module. The e-module content covers the history, characteristics, and supporting elements of Jaipong dance, as well as the definition of dancer makeup, tools and materials, and makeup procedures. The design stage began with compiling a storyboard describing the content of the e-module, together with the collection of material from various sources, including e-books, articles, research journals, and personal documentation.

Development. In the production stage, the researcher used the Canva application as the tool for compiling the e-module. Through Canva, the researcher assembled the product by adding elements such as text, illustrations, images, and hyperlinked videos. Hyperlinks were embedded to facilitate

navigation between pages and to access videos from YouTube. All content and elements were arranged in a structured manner to create an aesthetically appealing product. The stages in producing the e-module included creating the cover, the main menu page, the instructions page, the introduction page, the learning-material menu and content pages, the summary page, the quiz, the glossary page, the developer profile page, and the reference page.

After the initial product design was completed, it was validated by material expert I (a lecturer in the Cosmetology Study Program, Universitas Negeri Jakarta), material expert II (the supervising teacher of the Traditional Dance Student Day program), and a media expert (a lecturer in the Informatics and Computer Engineering Education Study Program, Universitas Negeri Jakarta). This validation aimed to evaluate the feasibility of the e-module before it was used in the learning process.

Table 1. Material- and Media-Expert Validation Results

Evaluation	Stage 1	Stage 2 (after revision)	Interpretation
Material expert I	93.75%	98.75%	Highly feasible
Material expert II	93.75%	100%	Highly feasible
Media expert	95.71%	100%	Highly feasible

Following revision, material expert I awarded a score corresponding to 98.75%, an increase from the initial 93.75%; material expert II awarded a score corresponding to 100%, an increase from 93.75%; and the media expert awarded a score corresponding to 100%, an increase from 95.71% (Table 1). Comments from material expert I and material expert II mainly concerned correcting typographical errors and the formatting of foreign-language terms, while the media expert recommended adjusting several font colors, ensuring layout consistency, and adding a note that the main-menu buttons were clickable. All revisions were incorporated before the product proceeded to implementation testing.

Table 2. Practicality Test Results

Practicality Test	Participants	Score	Interpretation
One-to-one	3 students	85.71%	Highly practical
Small group	8 students	88.57%	Highly practical

Practicality testing was carried out in two stages. In the one-to-one test involving three students representing high, moderate, and low ability, the e-module achieved a percentage of 85.71%, categorized as highly practical. In the small-group test involving eight students, the e-module achieved a percentage of 88.57%, also categorized as highly practical (Table 2). Across both stages, students rated the e-module positively on ease of use, efficiency, attractiveness, readability, and usefulness, indicating that the product could be used and understood with minimal assistance.

Effectiveness of the Product

The effectiveness test involved 22 students of the Traditional Dance Student Day program, who completed a pre-test before using the e-module and a post-test after studying it. The average pre-test score was 60.90, which increased to an average post-test score of 92.72. The N-Gain calculation based on these averages produced a score of 0.81, which falls into the high category according to Hake's (1999) interpretation criteria. This result indicates that the e-module was effective in improving students' understanding of Jaipong dancer stage-makeup material.

Dissemination of the final e-module was limited to the Traditional Dance Student Day program at SMA PGRI Plus Cibinong, where the product was provided to the supervising teacher for continued use in practical activities. Wider dissemination to other schools was outside the scope of this study because the product was designed specifically around the operational conditions and needs of this particular program.

b. Discussion

The validation results indicate that the developed e-module achieved a very good level of feasibility from both the content and media perspectives. The score for material expert I increased

from 93.75% to 98.75% after revision, indicating that the revisions made based on the validator's input succeeded in refining the quality of the e-module's content, including the accuracy of the material, the systematics of presentation, and the clarity of language. This finding is consistent with Farenta (2023), who states that a feasible e-module must contain material appropriate to the learning competencies, be presented effectively and systematically, use communicative language, and be supported by illustrations that help students understand the material.

The score for material expert II increased from 93.75% to 100% after revision, indicating that the e-module had fulfilled all assessment indicators on the material aspect and was therefore considered highly feasible for use in learning. This finding also aligns with Farenta (2023), who emphasizes that an e-module must fulfil the aspects of material appropriateness, systematic presentation, communicative language, and support for students' understanding of the learning material.

For the media expert, the feasibility percentage increased from 95.71% to 100% after revision. This increase indicates that improvements to the layout, the addition of navigation explanations, and changes to font color made the e-module's appearance more attractive, consistent, and easy for students to use. This finding is consistent with Ramadhani et al. (2021), who state that e-module development needs to pay attention to layout consistency, font selection, color use, and ease of navigation so that information can be conveyed effectively and understood easily by users.

The one-to-one practicality test produced a percentage of 85.71%, categorized as highly practical. This result indicates that the e-module was easy for students to use, both in terms of instructions for use, presentation of material, and the module's appearance. Students were also able to study the material independently without significant difficulty. This finding is consistent with Pantiwati et al. (2024), who state that a good e-module has the characteristics of being user-friendly and self-instructional, that is, easy to use, equipped with clear instructions, and able to help students learn independently.

The small-group practicality test produced a percentage of 88.57%, also categorized as highly practical. This result indicates that the e-module could be used well by students within a small group and was able to support the learning process. Systematic presentation of material, an attractive appearance, and ease of navigation provided a more effective learning experience. This finding is consistent with Pantiwati et al. (2024), who state that an e-module should have adaptive, stand-alone, and user-friendly characteristics so that it can be used flexibly on various devices and makes it easier for students to access the learning material.

The effectiveness test showed an improvement in student learning outcomes after using the Jaipong Dancer Stage Makeup e-module. The students' average score increased from 60.90 on the pre-test to 92.72 on the post-test, with an N-Gain score of 0.81, which falls into the high category. This result indicates that the developed e-module was able to help students understand the material better. This finding is consistent with Triyono (2021), who states that an e-module can be used as an independent learning resource because it presents material systematically, attractively, and accessibly, thereby supporting improvement in students' understanding.

This finding is also supported by the research of Ariska et al. (2023), which showed that e-modules can have a positive impact on the learning process, both in improving motivation and learning outcomes. The presentation of material accompanied by illustrations, practical steps, and an attractive appearance made it easier for students to understand each stage of Jaipong dancer makeup, so that the learning process became more effective.

Based on the overall results of this study, the Jaipong Dancer Stage Makeup e-module that was developed has fulfilled the aspects of feasibility, practicality, and effectiveness as a learning medium. This is demonstrated by the expert-validation results, which showed a highly feasible category; the practicality test results, which showed a highly practical category; and the improvement in student learning outcomes shown in the effectiveness test. The product is the first Jaipong-specific stage-makeup e-module developed for this school, combining curricular material, personal documentation, and multimedia elements such as hyperlinked instructional videos.

Nonetheless, this study has several limitations. The development period was relatively short, the number of participants in the one-to-one (three students), small-group (eight students), and effectiveness (22 students) tests was limited, and dissemination was restricted to a single school

context. Future research is recommended to implement the e-module more broadly across different schools or student groups, to add more interactive digital features, and to examine the e-module's effectiveness over a longer period of use.

4. Conclusion

This study aimed to develop a Jaipong Dancer Stage Makeup e-module as a learning medium for the Traditional Dance Student Day program at SMA PGRI Plus Cibinong, using the ADDIE model. Based on the results obtained, the developed e-module fulfilled the aspects of feasibility, practicality, and effectiveness, and can therefore be used to support the learning process as well as serve as an independent learning resource for students.

The feasibility test results showed that the percentage of material expert I increased from 93.75% to 98.75%, while material expert II increased from 93.75% to 100% after revision. In addition, the media-expert validation result also increased from 95.71% to 100% after refinement of the layout, navigation explanation, and font color. Based on these results, the e-module is declared highly feasible for use as a learning medium, having fulfilled the assessment criteria from both the material and media aspects. In addition to the feasibility test, the e-module was also tested through one-to-one and small-group practicality tests. The one-to-one test result showed a percentage of 85.71%, and the small-group test showed a percentage of 88.57%, both falling into the highly practical category. These results indicate that the e-module is easy to use, easy to understand, and able to support students in studying the material independently. Thus, the Jaipong Dancer Stage Makeup e-module can be used as a practical learning medium in the Traditional Dance Student Day program at SMA PGRI Plus Cibinong.

The effectiveness test results showed an improvement in student learning outcomes after using the e-module, as indicated by the increase in the average score from 60.90 on the pre-test to 92.72 on the post-test, along with an N-Gain score of 0.81, categorized as high. These findings demonstrate that the developed e-module was not only feasible and practical but also effective in improving students' understanding of Jaipong dancer stage-makeup material.

Based on the overall research findings, the Jaipong Dancer Stage Makeup e-module that was developed has fulfilled the aspects of feasibility, practicality, and effectiveness. This is demonstrated through the expert-validation results, which showed a highly feasible category; the practicality test results, which showed a highly practical category; and the effectiveness test results, which showed an improvement in student learning outcomes. Accordingly, the developed e-module is considered feasible for use as a learning medium and as an independent learning resource for the Traditional Dance Student Day program at SMA PGRI Plus Cibinong. Schools and teachers are encouraged to make consistent use of the e-module and to evaluate its influence on student engagement, skill mastery, and learning outcomes over a longer period. Subsequent development is recommended to extend the e-module with more interactive digital features and to test it across a broader and more varied group of students and school contexts.

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