



Development of Android-Based Interactive Multimedia for Learning Topeng Tunggal Betawi Dance for Students of Dance Education Study Program, Jakarta State University

Irsyad Naufal Harits^{✉1}, Dwi Kusumawardani^{✉2}, Dinny Devi Triana^{✉3}

Dance Education Study Program, Faculty of Language and Arts, Universitas Negeri Jakarta, Indonesia.

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Abstract

The research aims to develop learning materials for Topeng Tunggal dance in Betawi Dance course, using interactive multimedia to optimize students' knowledge and skills. This type of research is R&D (Research and Development), using the ADDIE development procedure. The research subjects were students of class 2021. Research data collected by observation, interviews analyzed qualitatively and questionnaires quantitatively. The results of the expert test stage obtained an average score from material experts of 3.53, meaning "Very Good", with improvements: 1) costume name, 2) instrument design, and 3) instrument name. Learning experts 3.706 means "Very Good", with improvements: 1) evaluation features, 2) error buttons, 3) mask design, and 4) writing techniques. Media expert 3.075 means "Very Good", with improvements: 1) completeness of explanatory text, 2) consistency of navigation, 3) image size, 4) consistency of visual style, and 5) completeness of original photos of various dance motifs. The trial phase was carried out on 12 students in a small group, the results were in the form of comments including: 1) the media is interesting, 2) varied, 3) suitable for independent learning, 4) useful to help understanding and skills, 5) the application is not boring, and 6) the application is uniquely different from the others. The conclusion of the research is that D-Moleap interactive multimedia is very feasible to use, because it has features that are very helpful in practical learning and has fulfilled the criteria as a good interactive multimedia.

INTRODUCTION

The implementation of online learning, there are often problems caused by several factors. One of them is caused by the lack of utilization and mastery of learning media, which is essentially able to encourage the ability to develop thinking speed (Wijaya, 2021: 470). Ideal learning in today's digital era, if supported by the right learning media to carry out learning, of course, can make it easier to achieve the learning goals.

Learning media is an important component in the learning system. The importance of the role of media in learning activities serves as an intermediary to increase effectiveness when channeling information/messages in the teaching and learning process (Pribadi, 2017). The important role referred to as an intermediary, which in helping the process of delivering messages and knowledge information from the source to the individual who learns to build a form of understanding and experience (Arsyad, 2019). Learning media specifically plays a role in the process of providing a more concrete learning experience to overcome the limitations of the sensory power on the ability to understand when learning something (Handayani, 2014).

The implementation of online learning is not only a solution to overcome learning process during the pandemic. Learning activities carried out online eventually also become a necessity in learning concept today even though the pandemic has ended. Online learning in this context is also carried out by the Dance Education Study Program of Universitas Negeri Jakarta. In this condition, students and lecturers need to have information literacy and technology literacy skills in utilizing ICT (Information and Communication Technology) wisely in dance learning activities.

Based on the results of initial observations made on dance learning activities in the Dance Education Study Program, it is accustomed to utilizing ICT as a learning resource. Especially learning media based on online systems such as zoom meetings, google classroom, and

many others have often been used for dance learning. Practical learning, especially in the Betawi Dance course, especially in the Topeng Tunggal (Single Mask) dance practice material, the media used is in the form of dance learning videos. Learning video media has the advantages of being interesting, clear, efficient, and easy to control, although learning videos also have disadvantages like less able to involve students interactively.

Based on that problem, it is necessary to develop interactive multimedia learning media. The development of this type of interactive multimedia has been done before and introduced since 2013, the product at that time used Compact Disc (CD), video, or PC programs, along with the development of interactive multimedia technology, currently it can be used for learning media.

Interactive multimedia that has been developed in recent years and has become a reference in development research for learning dance is multimedia developed by (Wijaya, 2021) used for learning media for dance practice at Widya Dharma Raksaka. The results of the research were in the form of a program that can be operated with a computer device. The results of this development encouraged creative ideas in this study to develop learning media in the form of dance learning videos into an android-based interactive multimedia application by combining game nuances.

The development of android-based interactive multimedia in this study is intended to assist students in gaining knowledge and learning skills of Topeng Tunggal Betawi dance. The developed product is called D-Moleap (Dance Move Learning Application) media. Multimedia is designed to visualize practical material between image, video, and animation objects equipped with descriptions in accordance with the learning objectives. The feasibility test of learning media in this study, which is carried out by expert validation and field trials to students in small groups to determine the effectiveness of learning products. This android-based multimedia called D-Moleap is expected to

be used for learning media for Topeng Tunggal Betawi dance that is effective, interesting, and easy to access by students and lecturers.

RESEARCH METHOD

This type of research is included in R&D (Research and Development) which is used to produce development products and test the effectiveness of certain products (Sugiyono, 2017). The research was conducted at the initial stage, that needs analysis followed by the development stage using the learning product development procedure, namely ADDIE (Branch, 2009), which stages include: Analyze, Design, Develop, Implement, and Evaluate.

The implementation of the research took place from February to June 2022, most of which were carried out at the researcher's house, with the address Jl. Tanah Merdeka II RT.001 / RW.06 No.09, Kel. Rambutan, Kec. Ciracas, East Jakarta, DKI Jakarta. Other activities carried out outside the home include: 1) the production process of the Topeng Tunggal Betawi dance video for learning materials in multimedia which was carried out at the East Java Anjungan TMII, 2) the process of realizing the design into an android-based interactive multimedia product which was carried out at the KBMDG Studios office, 3) the process for product validation by material experts which was carried out at Mrs. Kartini Kisam's house, and 4) the process of limited trials in small groups with students of class 2021 which was carried out through zoom meetings.

The subjects of this research were class of 2021 students in the Dance Education Study Program who were specially selected from three rombel in the Betawi dance course. Interactive multimedia was tested for feasibility by several expert validators, including: material expert validators, learning expert validators, and media expert validators.

Data collection techniques in this study were: 1) observation, 2) interview, 3) literature study, and 4) document study which were analyzed qualitatively by referring to the Miles & Huberman model (1984). The questionnaire data collection

technique was analyzed quantitatively, which refers to the steps of converting the quantitative data score assessment into qualitative data according to (Sugiyono, 2015). Calculation of the criterion value of multimedia products after obtaining scores from the expert test with the formula. Criterion value = $\sum N : \sum B$.

Description.

$\sum N$ = Total score

$\sum B$ = Number of instrument items

Calculation of percentages for feasibility status with the formula proposed by Suardi (2018; 48), namely:

$$\text{Criterion value } P = \frac{\sum x}{\sum xi} \times 100$$

Description

$\sum x$ = Number of values obtained

$\sum xi$ = Number of the highest scores

100 = Constant.

RESULTS AND DISCUSSION

The research was conducted on 2nd semester students who were undergoing lectures in Betawi dance courses, especially in the learning material of Topeng Tunggal dance practice in the Dance Education Study Program, Jakarta State University. In the process, it is known that based on the distribution of the odd semester lecture schedule (116), from 3 Betawi Dance course groups which are conducted remotely / online every Wednesday according to the distribution of lecture hours taught by 3 Betawi Dance lecturers.

The development process in this study was carried out by applying the ADDIE procedure (Branch, 2009). Activities in research and development were carried out systematically with each stage that produced data or products. The stages of development include: Analysis, Design, Development, Implementation, and Evaluation.

In the needs analysis stage, several processes were carried out such as: a) competency analysis, b) analysis of learning media, and c) analysis of learning materials. Competency analysis that had been carried out produces data in the form of competencies that have not been and that have been mastered by students. Based on the results obtained by conducting

interviews with Betawi Dance lecturers and students, it is known that the competencies in Topeng Tunggal Betawi dance material that have been mastered by students are in CPMK-8 on costumes and dance properties. Competencies that have not been well mastered by students are in CPMK-6 and CPMK-7 on the types of body postures in demonstrating Topeng Tunggal Betawi dance movements.

The analysis of learning media that had been carried out produces data in the form of types of learning media that had been used so far, and media that were needed to be developed. Common problems found from dance learning videos that had been used as learning resources, apparently had not been able to help students in learning Topeng Tunggal Betawi dance. Students still experience confusion in learning dance movements, so multimedia is needed that can help optimize students in learning about the knowledge and skills of Topeng Tunggal Betawi dance.

The analysis of learning materials that had been carried out produces data in the form of the type and order of material to be presented in multimedia. According to Dinatha & Kua in (Dalimunthe & et al, 2021) that this needs analysis process needs to be done.

The next stage carried out in this research and development is the design process. (Srikandika, 2019) explained that the design process is also known as designing. The results can be blueprints, storyboards, layouts, or others. The design process can choose a combination of relevant methods and media. The design process in this research and development had produced multimedia schemes with branching models and layouts that served as an overview of the product in appearance, as follows.

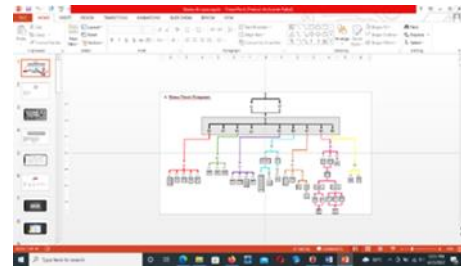


Figure 1. Scheme of interactive multimedia branching model for learning Topeng Tunggal Betawi dance (Source: Harits, 2022)

Photo 1 is a schematic showing the conceptual design which consists of several parts, including: 1) login; 2) main menu; 3) profile menu; 4) settings menu; 5) information menu; 6) practice menu; 7) studio menu, 8) exercise menu, and 9) exit menu. The scheme was then designed in more detail to become a layout design visualized in photo 2 below.

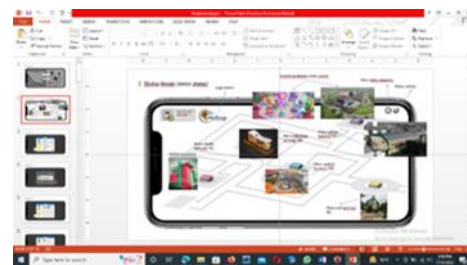


Figure 2. Layout design of interactive multimedia for learning Topeng Tunggal Betawi dance (Source: Harits, 2022)

The development process is the next stage that needs to be done after the design results have been compiled. The activity carried out at the development stage according to (Srikandika, 2019) is a special process in realizing and developing design concepts into a real product. The result that had been obtained in this development stage was an android-based interactive multimedia in the form of application software that can be accessed via a smartphone device with an APK format measuring 82.35 MB for learning Topeng Tunggal Betawi dance. The interactive multimedia display can be seen in photo 3.



Figure 3. D-Moleap multimedia product for learning Topeng Tunggal Betawi dance (Source: Harits, 2022)

The next stage in the development step is the trial stage. Srikanika, et al., (2019: 16) explained that after the product was successfully realized, the next is the trial stage before implementation. The trial activity at the development stage in the ADDIE procedure is called the expert validation process. This activity according to (Kurnia, 2019) is important to carry out in determining the feasibility and finding shortcomings of the product that has been developed. Based on the expert validation that has been carried out by 1 material expert, 3 learning experts, and 2 media experts, it can be known as follows

1. Material experts, validated from the aspects of material, benefits, and software. The average score obtained is 3.53 from the range of score 1-4, then the score of 3.53 means "Very Good". The percentage of product feasibility of 88.33% is included in the very feasible category. Improvements made according to the material expert's suggestions, including: 1) costume name, b) instrument design, and 1) instrument name.

2. Learning experts, validated the aspects of learning design, language, and benefits. The average score obtained was 3.706 from a score range of 1-4. The score of 3.706 means "Very Good". The percentage of product feasibility of 92.77% is included in the very feasible category. Improvements made according to learning expert suggestions, including: a) evaluation features, b) error buttons, c) mask design, and d) writing techniques.

3. Media experts validated the visual communication and software aspects. The average score given was 3.075 from a score

range of 1-4, meaning "Very Good". The percentage of product feasibility of 76.875% is included in the "Very Feasible" category. Improvements made according to media experts' suggestions, including: 1) completeness of explanatory text, 2) consistency of navigation, 3) image size, 3) consistency of visual style, and 4) completeness of original photos for clarity of various dance motifs.

The products resulting from the development that have been validated and declared suitable for use are then tested in the implementation stage. This implementation stage is the next stage that must be done after the development process is complete. According to (Kurnia, 2019: 523) the trial process is an activity which purpose is to determine the level of usability or ease of use of the product in the learning process. At this trial stage, feedback is obtained which is useful for revising the product. The trial was conducted in small groups, the results obtained were in the form of responses/comments from students about the quality of interactive multimedia, namely: 1) the media is interesting, 2) it is very varied, 3) it is very suitable for distance learning, 4) it is very useful to help understanding and skills of Topeng Tunggal dance, 5) the application is not boring, and 6) the application is very unique because it is specially designed for learning Topeng Tunggal dance, so it is different from other applications.

The final stage in the ADDIE procedure in this study is evaluation. This evaluation process according to (Srikanika, 2019) is carried out to provide an assessment, which can basically be carried out throughout the stages in the ADDIE development procedure steps. The form of evaluation according to (Kurnia, 2019) can be in the form of revisions, suggestions, comments, and input during the process at each stage, whether obtained from students, lecturers, or validators. Conducting an evaluation according to (Dalimunthe, 2021) has the benefit of knowing the advantages and disadvantages contained in the product through an assessment in the form of either oral or

written as feedback on product performance.

Based on the research and development that has been carried out, several advantages and disadvantages of the D-Moleap interactive multimedia product were found. The advantages include: 1) the latest appearance and different from all other types of interactive multimedia, because android-based interactive multimedia called D-Moleap is packaged in the form of an application with a file size of 185 MB. The multimedia does not require supporting programs, and can be directly accessed on the user's smartphone by downloading via the Google Drive link; 2) interactive multimedia is used for Topeng Tunggal Betawi dance practice; 3) multimedia is flexible because it can be used anywhere and anytime for self-study, without being limited by time and place of study; 4) the material presented varies such as: text, images, sound, video, and dance animation so that learning does not feel boring; 5) the buttons available are consistent and interactive making it easier to explore each layer; and 6) the multimedia concept still prioritizes lecturers as the main source for evaluation activities in Topeng Tunggal Betawi dance learning. Some of these advantages are also found in his research (Husein, 2015), that learning using interactive multimedia will certainly make learning activities more interesting, interactive, efficient, effective, flexible, and can improve critical thinking skills.

The disadvantages of the developed product: 1) the subject matter is still limited to what is conveyed in multimedia only, 2) developing material in multimedia requires special time, skills and additional costs that are not small, 3) accessing the Topeng Tunggal Betawi dance video in multimedia is still through the help of YouTube, so that the smooth learning also depends on the availability and strength of the user's internet signal, and 4) the process of distributing multimedia via google drive requires access key permission from the file uploader when it wants to be downloaded. Based on some of these shortcomings, research conducted by Munadi in (Prasetyo, 2018), also explains that the

same shortcomings are the development process requires a professional team and it takes a quite long time to get the perfect results.

During the research and development process, there were limitations including: 1) the research time carried out is still limited to one scope only, namely, in the Dance Education Study Program at the Jakarta State University, 2) the development of learning media in the form of android-based interactive multimedia using Macromedia Flash only covers one subject, namely Topeng Tunggal Betawi dance material, 3) the development of material in multimedia requires special time and skills and a lot of additional costs, 4) accessing the Topeng Tunggal Betawi dance video in the multimedia, still through the help of YouTube to ease the performance of the media so that the smooth learning also depends on the availability and strength of the user's internet signal, 5) the process of improving multimedia takes quite a long time for one revision process, because the coding is interconnected with each other so that if there is an error, of course the other parts can be automatically affected, and 6) deadlines in completing product revisions are often delayed from the predetermined schedule.

CONCLUSIONS

Based on the research and development carried out, that D-Moleap interactive multimedia for learning Topeng Tunggal Betawi dance in Betawi Dance courses for students is considered very feasible to use. The feasibility of D-Moleap interactive multimedia can be proven from the results of expert validation data and limited trials conducted directly to students. The quality of D-Moleap multimedia can optimize the knowledge and skills of dancing the Topeng Tunggal Betawi dance and has met the criteria as a good interactive multimedia. Furthermore, this dance learning media is more interesting and different from the others. One of them is by including the concept of 3D modeling for the design of the animation.

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