

DESIGN OF GAME-BASED LEARNING MEDIA THE HISTORY OF GENERAL SOEDIRMAN'S JOURNEY IN THE PACITAN REGENCY GERILYA WAR

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Abstract

The digitalization of Indonesian education cannot be separated from the role of learning media. Learning media is the main focus after the implementation of technical support made by the education development team in Indonesia. Learning media is not only a part of the visualization transfer, but must contain elements of learning objectives, interesting, effective in conveying the messages, have the local wisdom side, and have product practicality. However, the history learning process in Pacitan Regency only contains conventional media which is less attractive to students. The design of game-based learning media on the history of General Soedirman's journey in the guerrilla war of Pacitan Regency was implemented using the ADDIE model with the results of the media expert validation trial of 85% and material expert validation 90%, related to both of these, the user software trial got a score of 88.4 % and declared fit for use and dissemination.

Keywords: Media, learning, game, Soedirman

1. Introduction

The educational learning process in Indonesia cannot be separated from digital-based learning media which is a major part of the revitalization of Indonesian education. This learning process has changed the poles of the learning media used in the mission of transferring conventional knowledge into the digital realm. One of the backgrounds of the process of digitizing learning media can not be separated from a survey conducted by the Program for International Student Assessment (PISA) in 2018, Indonesia's ranking in PISA has become the latest reference for the size of Indonesian education in the eyes of the world. The international world sees that Indonesian education in the reading category is ranked 74th in the world, mathematics is ranked 73rd, and the science category is ranked 71st [1]. The program carried out by the Ministry of Education, Culture, Research, and Technology (KEMENDIKBUD RISTEK) through various new program approaches reflects that Indonesian education is incubating the improvement process. For example in the scope of higher education from the Indonesia International Student Mobility Awards program, independent student exchange programs, campus teaching, internships, village building, humanitarian projects, independent studies, entrepreneurship, research, and humanitarian projects [2]. All of these demands are also followed in secondary level universities, one of which is removing the national exam into an assessment test. Pacitan Regency which is in the territory of East Java Province has an area of 1,390 square kilometers with a population of 586,100 people in 2020. The Main Regional Cultural Mind Document (PPKD) of Pacitan Regency, describes one of the historical sequences that cannot be separated from guerrilla warfare and the figure of General Sudirman as the main actor. The history of this city provides a witness to Indonesia's independence. Scientific studies and media development on history learning conducted by [3] about the identification of the Wayang Beber value as a learning media, [4] the history usage

through the cultural heritage of Pacitan Regency, [5] study of the symbolic meaning of the local wisdom of the mantu cat, and [6] about the urgency of understanding the site-based learning of guerrilla warfare in Pacitan Regency, the researchers found that the previous process was conventional in the process of implementing learning media.

In relation to these emergency problems, conventional learning media are augmented reality, virtual reality and digitizing game-based history learning into modern technologies that are worthy of development. The focus of the goal of advancing history learning that is implemented for adults is ideal for implementation.

2. Method

The method used in implementing this research is the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model. This research produces a product in the form of game-based learning media. With regard to the results of the study, in [7] describes that there are several reasons why the ADDIE model is very suitable to be used, including (1) the ADDIE model can adapt well to various conditions, (2) the ADDIE model has a high degree of flexibility in solving a problem, (3) the ADDIE model is a development of intervention teaching and its revision of each assessment provide a structured framework. The stages of the ADDIE model are divided into five which include analysis, design, development, implementation, and evaluation can be seen in the following chart:

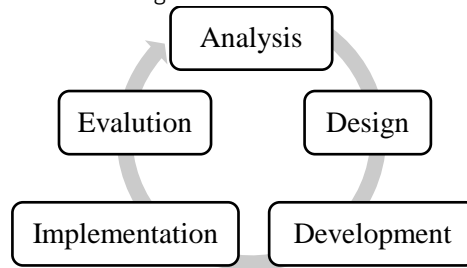


Figure 1. The stages of the ADDIE model

The data analysis technique used to determine the size of the validation is through a Likert scale with the following formula:

$$P = \frac{\sum x}{\sum xi} \times 100\%$$

Description:

P : Validation score percentage

$\sum x$: Total indicator score in each category

$\sum xi$: Total score

In relation to the results of the calculation process, the size of the criteria table for the percentage of indicators is as follows:

Table 1. Validation criteria table

Interval Presentase	Criteria	Keterangan
80% < score ≤ 100%	Very Valid	No Revision
60% < score ≤ 80%	Valid	No Revision
40% < score ≤ 60%	Quite Valid	Need Revision
20% < score ≤ 40%	Less Valid	Revision
0% < score ≤ 20%	Very Invalid	Revision

The implementation of this stage was implemented to 50 students majoring in Crafts at SMK Negeri 1 Pacitan with the formula:

$$y = \frac{x}{Ideal\ Score} \times 100\%$$

This stage uses the final check feature column as follows:

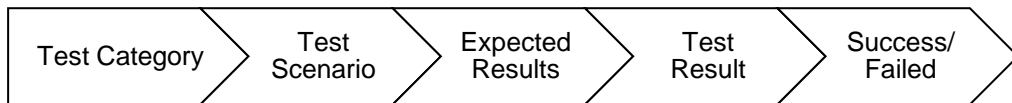


Figure 2. Testing Scenario

3. Finding and Discussion

Material Identification and Software Workflow

The analysis stage is part of the data collection process as well as the analysis stage of all documents and files required in the research [8]. The analysis stage or requirements analysis is the first stage that must be passed because it is related to the analysis of the problems being studied [9]. At this stage, apart from analyzing the needs that have been collected, it also provides practical steps for prioritizing needs and other related components [10]. Regarding the analysis stage in the research development design of learning media based on the history of General Sudirman's journey in the guerrilla war of Pacitan Regency. Through interviews with sources Soekarno, the researchers explored data on the history of guerrilla warfare with the main character General Sudirman as follows:

Table 2. Conclusions from interviews with academic sources

Conclusion 1	Pacitan Regency is believed to have given a lot of color in the nation's journey to maintain independence. One of the most obvious traces of history was during the second Dutch military aggression in 1949. For three months, the commander-in-chief General Sudirman led the guerrillas in this area.
Conclusion 2	According to the search results and historical records, Sudirman began to enter the Pacitan area starting from Klepu village, Sudimoro sub-district.
Conclusion 3	After Sudimoro, several sub-districts that Sudirman's troops passed were Tulakan, Tagalombo, Bandar, and ended up in the mountains in Nawangan sub-district. The distance is 40 to 80 km with uphill terrain typical of mountains and steep hills.
Conclusion 4	Sudirman died on January 29, 1950 due to the severe tuberculosis he suffered. His body was buried at the Kusuma Negara Heroes Cemetery in Semaki, Yogyakarta. In 1997 he was awarded the title of General Posthumous with five stars, a rank that has only been held by three generals in Indonesia until now. General Sudirman was awarded the title of national independence hero.
Conclusion 5	In Pacitan owned by someone named Karsosemito. In this house, General Sudirman lived. The general was accompanied by three bodyguards, namely Supardjo Rustam, Tjokropranolo, and Utoyo Kolopaking. There are four rooms in the house.
Conclusion 6	Visitors at this time can enter the room of the three guards, but the general's room is free to visit in Nawangan District, Pacitan Regency.

Starting from the conclusion of the data, the following game workflow is presented in the software:

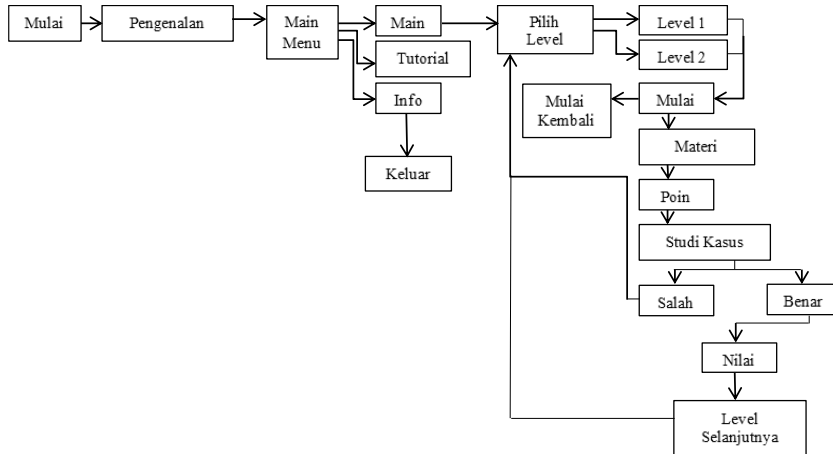


Figure 3. Game workflow

User Interface and Game Assets

Success in delivering content and material in the form of real activities that are packaged with graphic displays in a game that has an important influence is asset design [11]. In developing the design of game assets, a special study and analysis is needed so that it can relate to the adaptation of real-world objects that are packaged into virtual displays as a medium for learning the history of General Sudirman's journey in the Pacitan Regency guerrilla war. The following is an asset design presentation to support visual assets:



Figure 4. Asset design presentation

In developing the game design as a medium for learning the history of General Sudirman's journey in the guerrilla war of Pacitan Regency, the research team got 85% in media expert validation, and 90% in material expert validation. Regarding this indicator, the software has a valid indicator, no revision, and can be disseminated. In this regard, the implementation of product trials is carried out on samples related to users [8]. The implementation stage was carried out to 50 craft students at SMK Negeri 1 Pacitan, obtaining 88.4% results, it was declared very good (development was feasible to be implemented).

4 Conclusions and Suggestions

Design a historical learning media design that contains elements of learning objectives, is interesting, effective in conveying messages, has a local wisdom side and has product practicality with a focus on digitizing learning media based on the history of General Sudirman's journey in guerrilla warfare in Pacitan Regency in the implementation mission of

supporting the digitization of learning media in Indonesia with social science disciplines is implemented using the ADDIE model with 85% media expert validation results and 90% material expert validation. In this regard, the media is valid and feasible to be implemented. This is also supported by the user's software testing getting a score of 88.4% and being declared eligible for use and dissemination. Suggestions for the development of the next stage of virtual reality-based media by displaying interactive and active learning objects to provide a virtual touch for users in setting the background of the independence era in responding to the challenges of advancing culture based on science, technology, engineering, art, and mathematics (STEAM).

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