Educational Game Design “Napak Tilas Panji Asmorobangun” in “Wayang Beber” Story

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Abstract

The process of digitizing historical learning in Indonesia in times of emergency, the learning media used today is predominantly conventional. With regard to conventional learning media, the contribution of digitalization of learning media to provide direction for modernization of historical learning media in solving the lack of exploration, elaboration, critical thinking skills, the flow of historical learning concepts, and the lack of touch to local wisdom is needed. Using ADDIE Model, the design of the educational game of Panji Asmorobangun in the story of puppets beber Pacitan focus is implemented in Vocational High School (SMK) State 1 Pacitan gained 87.5% in the validation of media experts, 91.1% in validation of material experts. With regards to expert validation, this media also scored 87.22% in a group trial of 50 students and said it is very feasible to implement under the name of superpanji media branding. The historical learning media of Panji Asmorobangun figures in puppet stories beber Pacitan Regency supports the game flow process with (High Order Thinking Skills) HOTS through the 5M tificaf design approach (enjoy, menanya, collect information, socialize, and communicate).

Keywords: Learning Media, Games, Puppets Beber, Panji Asmorobangun

INTRODUCTION

Currently, Indonesian education is digitizing massively. The process of changing the culture of digital-based education is not without reason, one of which is the data presented by *the Programme for International Student Assessment (PISA)* in 2018 which was released in 2019 as the latest reference to the world education ranking in the Programme for International Student Assessment (*PISA*). The study measured the math, reading, and science performance of Indonesian children from 79 countries every three years. In this study, Indonesia in the reading category was ranked 74th in the world, mathematics ranked 73rd, and the science category was ranked 71st (OECD, 2021). Related to what the *Programme for International Student Assessment (PISA)* presents, Indonesian education is indeed in the incubation period of improvement of the education sector towards digital. This is also reinforced by (Pujilestari, 2020) about the impact of the online learning

process in secondary and higher education schools that form an electronic *university system*. While in the field of the process of implementation of digitalization of education is reflected in the learning *process*, this is as done by (Irmawan, 2021) about the process of implementing micro teaching courses in higher education and (Dewi, 2017) about the learning curriculum course process.

The drive for digitalization of education in Indonesia is certainly inseparable from digital-based learning media. Learning media is not just a medium, but has a purpose as a support for education, material delivery, and provides knowledge incubation facilities for students in full (Rahmatullah, 2021). Currently, the medium of learning is never separated from the interactive medium (Rahmat et al., 2019), this medium has software that can interact virtually between the user and the medium. Interactive learning media is synonymous with augmented reality, virtual reality, and gaming-based learning media. Augmented reality, synonymous with space that allows the process of adding virtual forms in a real environment (Real room) (Martín-Gutiérrez et al., 2015), within the scope of augmented reality learning media used by (Hamzah & Kurniadi, 2019) about the development of learning media implemented in networked hardware learning, (Rosa et al., 2019) on the use of augmented reality in solar system learning media, and (Pramono & Setiawan, 2019) about the implementation of augmented reality in fruit selection-based learning media. Furthermore, virtual reality is a technology that makes users in a virtual virtual environment with real imagery (Tarmizi et al., 2020), virtual reality is also implemented in interactive learning media by (Arkadiantika, Ramansyah, Effindi, & Dellia, 2020) in *termination* material and *splicing fiber optic*, at the education level. Basic procedures implemented by (Supriadi & Hignasari, 2019) to improve the learning outcomes of elementary school education.

The role of games is never far apart from the interactive learning media of augmented reality and virtual reality, research-based research-based development research (RnD) with a specific focus of games in Indonesia has been implemented in various disciplines. Previous research studies include (Elianta et al., 2019) on board games on driving safety, (Salsabila & Setyaningrum, 2019) on the development of game *statistics in the arctic* and (Noor & Astutik, 2019) with the implementation of game learning media in early childhood.

Games as a learning medium are synonymous with interesting processes and results in implementation to learners as an improvement in the interaction side of learners' activeness (Nurhayati, 2020), understanding in materials (Rozi & Kristari, 2020), and implementation of increased discipline attitude (Noor & Astutik, 2019).

Depart from education, game-based learning, and the learning process. This is inseparable in historical learning, some problems in conventional historical learning such as lack of exploration, elaboration, and confirmation (Sofi,

2017), conventional history learning is lacking in improving critical thinking skills (Hardiana, 2017), learners only understand as readers without the concept of outdoor learning in historical sites (Sulistyo, 2019), and lack of curiosity because only one way as a reader (Silmi & Kusmarni, 2017). Conventional historical learning is also minimal against a touch of local wisdom (Romadi & Kurniawan, 2017).

Pacitan Regency becomes a regency in East Java Province, with an area of 1,390 km² supported by a population of 586,100 in 2020, Pacitan Regency can not be separated from thousands of cultural relics in the scope of local wisdom, in the Regional Culture Mind (PPKD) Regency / City. One of the cultures that are the priority of preservation in the document is Wayang Beber.

Wayang Beber is a puppet performance art by manifesting in a stretch or in a language of answer called "bèbèran" or "ꦧꦺꦧꦺꦫꦤ꧀". Lembaran medium

wayang beber is disi with illustrations of puppet scenes then narrated by the puppeteer during the show. Puppet shows mushroomed and developed rapidly on the island of Jawa in pre-Islamic times that gradually preserved to Islamic kingdoms such as the Sultanate of Mataram. Wayang beber identical to the story taken not far from the Mahabharata or Ramayana. In the process, the typical religion of Java island at that time was identical to Islam, the storyline of wayang beber appeared Panji as the main character. Tokoh Wayang Beber is identical to the story of Panji Asmorobangun (Rahmawati, 2018), cerita figure in puppet beber identical to the story that is good value to be traced, the value of responsibility, devotion, loyalty, national love, and tenacity in life (Margana et al., 2018).

Related to this, the process of learning puppets beber Pacitan community that Found by the research team still using conventional means with technical getok tular, pecantrikan, and some studies of college science by the original academic community Pacitan. The incubation process of knowledge about beber puppets carried out by (Margana, 2017) about *function* and *value*, (Yunita, 2015) wayang beber as the preservation of original art in Indonesia, the implementation of puppet learning media beber as a comic media (Maharsi, 2018), aesthetic studies (Pratama & Marwati, 2019), and animation (Priilosadoso et al., 2019). The process of assessment and conventional ways of learning becomes an emergency obstacle, because puppets are difficult to enter into the culture of Pacitan youth with as the next generation of cultural preservation. This provides a cultural preservation gap if packaging is done conventionally. (without interactive augmented reality, virtual reality, and game-based media) In modern digital media. In the process, the puppets are identical to the study History learning, the development of education in the field Hereditary history, and a special preservation process with limited groups A broad group.

Related to the emergency problem, the design of the educational game of Panji Asmorobangun in the story of puppet beber Pacitan Regency becomes an

option to outline the process of dissemination and education of beber puppets and iconic figures Panji Asmorobangun. This development research aims to be a learning medium with a history of authentic and validated Panji Asmorobangun figures, interactive learning media by dissemination through mobile games in giving dissemination of someber puppet knowledge (with the main character Panji Asmorobangun). The development research process to achieve these goals, using the ADDIE Model with five stages includes: analysis, desain, development, implementation and evaluation with product results can be used in formal, informal, or non-formal education.

METHOD

In this research focused in a DGSB system or *Digital Game Base Learning* so that the relevant procedures used are development models according to the ADDIE Model. The selection of the ADDIE model is due to its frequent use for instructional development (Puspasari, 2019). In using this model is considered simpler and can provide an opportunity for developers to revise the process that occurs (Nova et al., 2021), this process is useful to focus on the goal in order to be achieved in accordance with quantitative and qualitative research in the media development process. The stages of the development model for the development of educational games are asmorobangun banners in pacitan regency puppet stories using the ADDIE Model that can be illustrated through the following chart:

Chart 1. Addie Model Development Stages

Using the ADDIE stage model required five stages of section that must be passed in detail, as follows:

Analyze (Analysis Stage)

In this stage of analysis the material will be identified and studied by prospective game users (Harjanta & Herlambang, 2018). In this regard, fase analysis is a process to prove something developed (Aini et al., 2020). The stages in proving the things developed need to be done several steps: (1) *need assessment*, (2) identification of problems and needs, (3) task analysis (Khadijah et al., 2020). The stages carried out will produce an analysis that includes the problems that are being faced, the desired needs, and the completion of the task to be made (Harjanta & Herlambang, 2018). In this analysis stage, the search for data was conducted by interviews with Sukarno who is a teacher of cultural arts Sekolah Menengah Pertama Negeri (SMKN) 1 Pacitan and beber puppet artists who have a gunung mas studio gallery with distinctive featured paintings, namely wayang beber. The time required in this study one month starts in the month Februari to March. The place of implementation in the process of getting information to informants is in Malang and Kebonagung Village, Kapupaten Pacitan. In this activity is needed in developing a new learning model to enter the design stage (Fauzi et al., 2020).

Design (Design Stage)

Understanding design itself is a preparation of materials or assets and choosing a suitable *picture* (Wulandari, 2019). In the design phase of problems in the analysis process can be answered, dalam carrying out this activity design activities takes two weeks, namely in March the first week and the second week to develop conceptual learning design locations located in Malang. The design stage includes several stages of design such as the preparation of assets needed in accordance with the characters in the puppet story and the design of in-game storylines (*workflows*). In detail, the design phase begins with the analysis of narrative data by several sources and early stage research needs, after the analysis and reduction of data is completed, entering into the analysis of user characteristics that are tailored to the needs of adolescents aged 12 years to 24 years, related to this stage also determined the design of learning objectives as dissemination of knowledge puppetber through the transfer of knowledge of Panji Asmorobangun figures. The next stage is the process of designing the game flow design, this process is also tailored to the needs analysis (Prasetyo et al., 2021). After the software needs analysis stage is completed by the research team is the process of designing game assets and *workflows*, these two processes are done with adobe illustrator *software* for 2D assets, and workflows using diagrams.io software. The third stage is the development process that refers to two points of discussion. First, the development of learning plans for historical objects and placing the user's point of view as a learner in the transfer of knowledge through software design design as a process of teaching resources. Second, priorities to taxonomy of *high order thinking skills* (HOTS) and 5M approaches (Observing, Menanya, Trying, Reasoning, and Communicating). Both of these processes then

enter the development stage using *Unity 3D software*. The next stage, check the quality of *the software* with two things, as an examination of material quality and content quality through expert validation of materials and validation of media experts. Finally, the implementation with the process of checking software functions with open questionnaires and evaluation of open questionnaires as an evaluation of the process of completing software design work.

Chart 2. Game Production Flow

Develop (Development Stage)

The development stage is a stage to realize the truth of the design stage that has been created in accordance with existing rules (Harjanta & Herlambang, 2018). In the development phase (develop) ADDIE this model requires a period of one month starting from March the third week to April of the second week. This process continues the design stage in the preparation of the game flow framework, in this stage

of development the product is implemented in accordance with the design that has been prepared in order to be able to fulfill the objectives. The development phase there are several things that need to be achieved at other levels: product production (in this case digital assets) and product revisions that are not in accordance with the objectives and design mobile game products that are ready to be implemented.

Implementation (Implementation Stage)

At this stage the process of designing the implementation of development products is carried out (Wulandari, 2019). In this regard, the implementation phase of the product tested to the user will be calculated quantitatively through the function of product tools that can conduct an evaluation of small and large groups, then the next stage revises the deficiency until the creation of the final product according to the results of implementation (Cahyadi, 2019). The target in implementing this product is 50 Pacitan students with the implementation of activities located in Pacitan Regency. The implementation phase of this research product was carried out around April of the third week. In this implementation activity, the target is expected to achieve the goal of product design, solve the problems obtained, and improve product understanding in the dissemination process and the product mission is made.

Evaluate (Evaluation Stage)

The evaluation process into a stage is the final stage in the final ADDIE model development model (Wulandari, 2019) by conducting a qualitative determination of the product function. Evaluation becomes a process by splashing out on a particular product in detail related to the function of the product (Kurnia et al., 2019). In the evaluation activities of the implementation time, namely in July of the fourth week, located in Pacitan for the implementation of material evaluation and media evaluation located in Malang and Pacitan Regency. Evaluation activities are carried out step by step with the aim of improving products that have been created in accordance with revisions from the validation of material and media experts (Ardiansah & Miftakhi, 2020).

RESULTS AND DISCUSSIONS

Analysis: Process of Initial Findings of Problems

The analysis stage is stage one in the development of a system started (Anwardi et al., 2020). In (Prasetyo et al., 2021) it is explained that during the analysis stage also carried out the collection and analysis of all documents and files to be used. At the analysis stage is a very important stage and it needs to be considered because if there is an error this stage will cause errors in the later stages (Faulina, 2017). In addition to analyzing the needs that have been collected, the analysis stage also determines the priority of needs and interrelationships between

needs (Subhiyakto & Safina, 2017). If the data is processed in a structured manner it will facilitate the next performance.

Related to the research process of developing the development of educational game design of asmorobangun banner in the story of puppet beber Pacitan Regency, observations were made to find problems, interviews were conducted with Soekarno as a teacher of SmK Negeri 1 Pacitan. Through interviews, the research team dug up data on what difficulties are experienced in developing puppet learning, and what media need to be used to accelerate the dissemination of puppet learning in Pacitan Regency.

The results of the interview obtained data that currently the interest in learning the history of puppets is very difficult because it still uses conventional learning, the process of wanting to promote education is the digitization of expertly validated learning resources in order to target the market of young people who have the antics in playing mobile phone. To strengthen the data, the research team disseminated questionnaires for 150 respondents with sample indicators who had been involved in the learning process of pacitan regency puppets with the following details:

Table 1. Responders

No	Question	Answer Options		
1	Is historical learning and puppet characterization difficult to learn?	Already	Neutral	Do not
		127 (84,6%)	9 (6%)	14 (9,4%)
2	Does the process of learning puppets need digitalization of media?	Already	Neutral	Do not
		126 (84%)	11 (7,4%)	13 (8,6%)
3	What digital media is suitable in the process of transfer diseminasi knowledge	WOULD	FRI	Game
		20 (13,3%)	24 (16%)	106 (70,7%)

The results of the questionnaire that took from 150 respondents, 150 respondents had sample indicators with the status of having been involved in the puppet learning process in Pacitan Regency for the last 5 years in various places. Based on the results of the table above, it can be analyzed that in the promotion of culture through the transfer of knowledge of puppets are currently difficulty in learning the history of puppets with an indicator of 84.6%. Furthermore, respondents stated that puppet learning needs to digitize media as much as 84% with a focus on game development of 70.7% as a suitable medium in digitizing the media.

Analysis: Advanced

In connection with this, the analysis stage in the follow-up problem of this development research, the research team conducted an interview in person, following some important findings of the interview with Soekarno, 2021, with the following important findings:

Table 2. Conclusion of reduction of source interview data

Conclusion 1	Panji Asmorobangun is identical to the narrow and observant eyes in seeing all the phenomena or problems of the surrounding environment, lips that are always smiling give a 'legowo' mood, and the banner of asmoro wakes up is also identical to a spiky nose.
Conclusion 2	Visualization of Panji in beber puppets is described as having an ideal body and in the body of the puppet, panji has a category of body that contains and burly.
Conclusion 3	Panji Asmorobangun comes from the kingdom of kahuripan a brave king's son from one of the kingdoms in the land of Java.
Conclusion 4	Narrated Inu Kertapati disguised under the name Panji Angronakung. Panji Inu Kertapati or Panji Asmorobangun went in search of Candrakirana, his long-time lover.
Conclusion 5	After arriving at the kingdom of Ngurawan, Panji served the king earnestly and became the beloved servant of king Nguraman for many years. During his service, Panji fell in love with Chandrakirana, the son of Demang Wengker.
Conclusion 6	Narrated King Daha then made a contest among the satria. Who is the most superior / sakti, he is the winner and will be compared with Candrakirana or Dewi Sekartaji

Based on the results of observations and interviews can be separated into two level conclusions, the conclusion of one to three becomes an analysis of the characteristics of Panji Asmorobangun figures, while the conclusion of four to six is a conclusion related to the process of involvement of Panji Asmorobangun in the story of puppets beber Pacitan regency.

Design: Workflow and assets in media

Bagan 3. Scientific Approach 5M

Learning media design educational game tak tilas Panji Asmorobangun in the story of puppet beber Pacitan Regency, adapted to high school with a scientific approach 5M (observing, questioning, associating, experimenting, and networking) with a focus on providing user experience in creating High order thinking skills (HOTS) aims to create culturally based character education (Primayana, 2020), improve the quality of historical learning transfer (Asrizal et al., 2018), critical thinking skills in historical learning (Rofiah, 2016), reasoning skills in receiving knowledge transfer (Wahyuningsih et al., 2019), and improving learning motivation (Suratno et al., 2020).

In this design stage, media design includes the creation of flowcharts, the creation of overall media design including storyboards, problem flow preparation, collection and creation of visual backgrounds, images, buttons, music backsound and dubbing sounds (Jayanti & Wiratomo, 2017). It is also supported by the opinion (Muslim, 2018) that in essence the design will be realized in a real form so that it can be used as a design or scenario for the assessment and manufacture of the finished product. (Darma, 2019) design is the first step of planning the creation of a product that has an output in the form of sketches (visual) images of a product to be made.

Software Workflow

Workflow itself can be interpreted as a software workflow that is packaged for a better and structured experience. Game is a form of entertainment played by someone by choosing his own character as a form of vice himself in the game. In the development of this superpanji game brings users or players to preserve and provide an education on the culture of puppets with the character panji Asmoro Bangun. Before the creation of the game, a workflow must be required. Here is the workflow of Superpanji game, Superpanji game taken from Panji Asmorobangun's journey in the story of puppet beber Pacitan Regency taken from the conclusion of the source:

Chart 4. Material Implementation Process

The process of reducing from the results of the interview, to a grid of levels in the game's mission. This process consists of level 1 consisting of missions completing missions related to the characteristics, visualization, and origin of Panji Asmorobangun. Furthermore, level two consists of the process of the user completing missions related to the asmorobangun banner genealogy in the royal lineage passed in the story of puppets beber Pacitan Regency. Here is the workflow of the game design game education napak tilas Panji Asmorobangun in the story of puppet beber Pacitan Regency:

Chart 5. Overall game workflow

Users enter the game to meet with the introduction about the game and the background of the game is made, then the user can access the main menu, in the main menu there are three options, first play, tutorial, and info. First, in the play menu users can choose a level according to the case study of the level you want to work on. Furthermore, once the game begins into the study of the story, on the way to reach the story the user must collect stars as chek point level. After the trip, at the end there is a throne to conduct and discuss case studies (Prasetyo et al., 2021). Furthermore, for participants who do the correct answer with high values, can enter into the next level or restart to choose the preferred level. This workflow is also adjusted, with the process in the game as it progresses users can restart to perform point searches. Second, in the main menu participants can choose the tutorial button as part of the steps in the game if difficulty using the game and understand the flow of play of the game. The three participants can choose info as a container of contact information of game creators and developers (*developers*) to see the software version update.

Design Assets

Asset design which is a visual element in a game is a key parameter of success in the delivery of content or material in the form of real activities in the form of graphic displays presented (Wibawanto, 2015). Therefore, in the development of asset design in this superpanji game requires special studies and analysis related to the form of adaptation of real-world objects into virtual displays. Filtration of data at the stage of analysis continues to be a visual asset to support the form of assets:

Table 3. Superpanji Game Assets

Object	Assets	Information
Character		Gamber is a visualization of the superpanji character displayed in the game, the image is a walking cycle or sequence of superpanji character displays when moving. Visual capture of superpanji characters is depicted in accordance with the shape of the original character, Panji Asmoro Bangun.
Main Background		Gamber is the main background of the game that serves as a background when the game is played by the user. Background capture is adjusted to the condition of the puppet so that users feel more like at the time Panji Asmoro Bangun is being displayed or staged.

Second
Background

Gamber is a variation of the background of both games that serve as a background when the game is played. The addition of a two-mountain icon to emphasize more when the puppet process is displayed.

Main menu view

The display is the main display of the game that contains the logo and main menu. In the main view of this game there are several menu options, so users can choose the option to be used. The menu includes play, tutorials, and info.

Coins and Papan
footing.

The star icon is used as a marker of travel coins when the user plays the game.

The second and third icons draw a footing board for users to make it easier to take coins.

Points

This display is used as a marker of the user the game has finished playing the game until the end. The 3-star is used as a marker that the user managed to win the game with a perfect score, 2 stars and 1 star users are less than perfect in playing

		<p>the game. If the user does not get a star at all indicates that the user has failed in playing the game.</p>
<p>Command button</p>		<p>the image is a visual of the appearance of the game menu options. The right, left, and top arrow displays are used as buttons to run characters in the game. The X button serves as a close or close menu for users exiting the game, the music tone image menu is used as the user wants to turn music on or off while playing, and the in-game exit icon.</p>
<p>Menu button</p>		<p>The image is the score rate of the superpanji game. In the menu menu will be used as a loading menu at the beginning of the game run. As well as displaying the user score after the game can be completed.</p>

The goal of the development stage is to produce a good and appropriate final draft result of the device. This is supported by a statement from (Yosanny et al., 2012) at the development stage aiming to produce valid media through media validity tests. In this stage of development consists of validation of the device by experts followed by revisions, simulations, and trials aimed at designing and revising the product so that a prototype is obtained (Kristanti & Julia, 2018). In this stage of development or development according to research (Syakti, 2019) also carried out the coding process based on the results of the design carried out in the design phase that refers to the results of the previous design.

Development (Development)

Chart 6. Development Stage Flow

The development phase begins with the reduction of textual narrative, this narrative goes into digital assets using adobe illustrator, then digital assets enter the coding stage using unity software for the game prototype process to be validated by Abdul Rahman Prasetyo, S.Pd., M.Pd. Who works as an educator majoring in art and design, Faculty of Literature, Malang State University which focuses in the scientific field of industrial design development, game design, and learning media as expert validation and Dr. Iriaji, M.Pd. Who works as an educator majoring in art and design, Faculty of Literature, Malang State University which has the discipline of cultural arts history, craft craft, and art education as material validation. Here are the results of the prototype stage of the game with the branding name Superpanji:

Figure 1. Superpanji Game

In the development of the design of educational games in the form of Pacitan Regency, the research team received 87.5% in the validation of media experts, and 91.1% in the validation of material experts.

Implementation

The ADDIE model is a systematic model used to design, develop and evaluate. In (Maymadya, 2017) outlines that the implementation stage is the stage of real application of development results to research targets focused on understanding real life. So that at this implementation stage, a trial of a product that has been developed and then conducts an evaluation (Prasetyo et al., 2021).

The implementation phase consists of processes that are in the interlocking design and outside so that this process is included in product implementation activities (Prasetyo et al., 2021). In the research (Darma, 2019) it is also explained that this implementation stage is the stage where the product is ready to be introduced and conducted feasibility testing with the aim of ensuring the product that has been created refers to the design and every function can run properly without any errors or errors. According to (From, 2015) for the implementation of this implementation system can be: (a) the writing of programs and installations; (b) Design review; (d) Selection of resources, hardware and software; (e) Testing of web and web documents. The implementation of this stage is implemented to 50 students of SMK Negeri 1 Pacitan with the formula

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

In this count, y is the percentage value, x is the number of results of the multiplication value of each respondent's answer, and the ideal score is the multiplication of the likert value against x the highest respondent. While the respondent's answer indicator consists of 1 = very less, 2 = less, 3 = enough, 4 = good, and 5 = very good. With indicators of total values <25% = very less (development done process from scratch), 26 - 50% = less (development done process from scratch), 51-70% = enough (continued development, revised process) 71-85% = good (development worth implementing), and 86-100% = Very good (development is worth implementing). Here are the researchers' findings during media trials in large groups:

Table 4. Test Implementation

No	Statement	Respondent's Choice					Total $\Sigma(\text{value} \times \Sigma \text{respondent})$	Percentage
		1	2	3	4	5		
1	Use of colors and backgrounds	0	0	4	14	32	228	91.2
2	Typography	0	1	5	16	28	221	88.4
3	Accuracy in writing object size	0	4	6	9	31	217	86.8
4	Accuracy in selecting text types and colors	0	0	6	3	41	235	94

5	How to move characters accordingly	0	2	10	13	25	211	84.4
6	Button size layout	0	0	8	18	24	216	86.4
7	Button color	0	0	1	18	31	230	92
8	Button shape is easy to recognize	0	0	2	19	29	227	90.8
9	Button function	0	0	10	12	28	218	87.2
10	Command display in the game user interface is easy to recognize	0	2	8	17	23	211	84.4
11	Musik fit in Game"Superpanji"	1	1	5	24	19	209	83.6
12	Accuracy of puppet history information beber	0	0	6	15	29	223	89.2
13	Accuracy of historical information Panji Asmorobangun	0	1	2	10	37	233	93.2
14	Ease of operation of the application	0	0	3	14	33	230	92
15	Convenience of using the entire app	0	2	7	18	22	207	82.8
16	Games are easy to play in various operating systems	0	0	20	11	19	199	79.6
17	The game supports specifications	0	2	8	17	23	211	84.4
18	The game flow is easy to learn	0	3	7	15	25	212	84.8
19	Logo easy to recognize	0	3	7	18	22	209	83.6
20	User icons are easy to recognize	2	3	5	9	31	214	85.6
1 = very less, 2 = less, 3 = enough, 4 = good, 5 = very good								87.22

In this regard, with software trials in large groups getting results of 87.22% declared very good (development is worth implementing).

Evaluation

In (Triyono et al., 2019) evaluation is interpreted as the process in examining, determining, and making decisions about programs or activities that have been done to assess the achievements of the program that has been done and what will be done next. According to (Maliki & Erwinsyah, 2020) explained that in the implementation of evaluation there are several processes that need to be done, namely the determination of the focus of evaluation, preparation of evaluation design, information collection, analysis and interpretation of information, report making, evaluation management, and evaluation for evaluation. In addition, in the evaluation stage also carried out a comparison of the results obtained at the trial and validation stage of experts (Hidayat et al., 2019). Related to this stage, the evaluation stage refers through the goal of problem solving and the instructional purpose of the development of educational games in The Panji Asmorobangun in the story of the puppet beber Pacitan regency with the following indicators:

Table 5. Final Test Results

Test category	Test Scenario	Hope of Test Results	Test Results	
			Good luck	Failed
The app runs perfectly	Whole application	Displays the home menu screen with a quick response when given commands by touching the mobile phone screen	✓	
		Music and sound sound well.	✓	
		Has sound and silent options in each app screen while running	✓	
		Display menu selection screen	✓	
Main Menu Options	Select the "start" button	View levels available in the game	✓	
	Select the "info" button	Displays information relating to beber puppet games and game creation backgrounds	✓	
	Select the "tutorial" button	View a manual on how to play	✓	
Level options	Play from the lowest level to	There are two levels with medium and difficult levels.	✓	

	the highest level		
		When the first level is played, the level that has not passed is locked.	✓
Start game	the Back button	Go to the beginning as a main menu	✓
	Next button	Go to the next level	✓
	Back button	Back to the previous level	✓
	How to walk the perfect character	Flexible in operating according to interactive buttons	✓
	"Point" score according to regulations	When you get a star, you get 10 points.	✓
Background history of Puppet Beber	Give a case through Stories with HOTS narrative taxonomy bloom	Dialogue tells about puppets according to level level according to dialogue in the game	✓
	Have clothes according to the character of a beber puppet	In accordance with the characteristics of the character of the beber puppet in accordance with the characteristics of Panji Asmorobanung in the story of the puppet beber	✓
	Background settings according to the background of the puppet beber	There are mountains and shades of chocolate that are identical to the life of Panji Asmorobangun in the story of the puppet.	✓

In this regard, the findings of the research team have completed the function of all software indicators, to meet the objectives of instrusional research development of educational game design in the form of Panji Asmorobangun in the story of puppets beber Pacitan Regency.

CONCLUSION

Designing educational games in Panji Asmorobangun in the story of Pacitan regency provides digitalization of learning media and provides direction of change in conventional historical learning into modern learning through digitization of learning media in solving problems of lack of exploration, elaboration, critical thinking skills, learning concept flow, and lack of touch. Local wisdom. Related to this, the design of educational games in Panji Asmorobangun in puppet stories in Pacitan Regency gained 87.5% in the validation of media experts, 91.1% in the validation of material experts. With regards to this learning media trial, 87.22% was declared very good and worthy of implementation.

The educational game of Panji Asmorobangun in the story of puppet beber has the name of superpanji branding, this learning media provides exploration in the recommendation of responsibility towards the tri dharma of the college. First, the field of education and teaching can be done with the implementation of digital learning media that can be implemented independently or in groups. Furthermore, the implementation of the field of community service can contribute to the process of cultural preservation based on Science, Technology, Engineering, Art and Mathematic (STEAM), and thirdly in the field of research can conduct the implementation of game development research with interactive three-dimensional visuals.

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