Development of an introduction to East Javanese culture learning application through Glideapps titled EJ Culture.

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ABSTRACT

The preservation of East Javanese cultural heritage faces significant challenges due to the rapid influence of globalization and modernization, with many younger generations becoming increasingly detached from their cultural roots and identity. Technology-based learning applications present a promising solution to introduce and preserve East Javanese culture in a more interactive and engaging way, potentially reigniting interest among youth through digital platforms they are familiar with. The research employed Research and Development (R&D) methodology by adapting the ADDIE model, which consists of Analysis, Design, Development, Implementation, and Evaluation phases to systematically create an educational technology solution. Data collection was conducted using quantitative techniques through questionnaires and assessment sheets distributed to participants representing various demographics, including students, educators, and general community members with diverse technological literacy levels. The sampling approach targeted a representative population from East Java regions to ensure comprehensive feedback on the application's usability. Validation results from expert assessments indicated high levels of content accuracy and educational value, while user testing demonstrated significant improvement in cultural knowledge and appreciation among participants who engaged with the application. The interaction patterns revealed that users particularly valued the application's visual representations of cultural artifacts and interactive elements that facilitated deeper engagement with East Javanese cultural content.

I. INTRODUCTION

Etymologically, the meaning of culture comes from the Latin word colere, which means to plow the land, cultivate, and maintain the fields. However, the original agrarian meaning was further applied to more spiritual things. Furthermore, in terminology, the meaning of culture is a way of life, namely, a certain way of life that radiates a certain identity of a nation. Then, the American Heritage Dictionary defines culture formally, "as a whole of behavioral patterns transmitted through social life, art, religion, institutions, and all the results of human work and thought" (Zuliana et al., 2023).

The Indonesian language means culture from the Sanskrit word "buddhayah" (Wiryanto et al., 2022). That is the plural form of buddhi, which means mind or reason. Another opinion says that the word culture is a development of the compound word: budi daya, which means the power of the mind. Therefore, they distinguish between culture and budaya. Culture is the power of the mind in the form of creativity, will and feeling, while budaya is the result of creativity, will and feeling. In principle, culture is the result of human efforts, both material and spiritual results and that culture is a social property and heritage, culture is formed in and with social interaction and is passed on to the younger generation through enculturation or education (Li et al., 2020). Culture according to Ki Hajar Dewantara, humans are cultured, meaning for the safety and happiness of humans in their life struggles. In society, culture is on the one hand influenced by members of society, but on the other hand members of society are influenced by culture (Hayati et al., 2021). For example: Europeans who have a cold climate are forced to make thick clothes. In areas with lots of wood, people are required to make houses from wood and so on.

Furthermore, Koentjaningrat defines culture as "The entire system of ideas, actions and works of humans in the context of community life that are made human property through learning". Koentjaningrat further divides culture into three forms, namely: (1) The form of culture as a complexity of ideas, concepts, values, norms, regulations, and others. (2) The form of culture as a complexity of patterned behavioral activities of humans in society, and (3) The form of culture as objects produced by humans. Culture can be measured based on general characteristics as stated by Robbins (1994) as follows: (1) Individual initiative, (2) tolerance for risky actions, (3) direction, (4) integration, (5) support from management, (6) control, (7) identity, (8) reward system, (9) tolerance for conflict and, (10) communication patterns. According to Soekamto, culture comes from the Sanskrit word "budayyah" which is the plural form of "budhi" which means reason. Thus, culture can be interpreted as things related to reason and intellect (Basto, 2025).

Meanwhile, Subir Choedhury stated that culture is a major source of sustainable competitive advantage that can emerge as a unifier in organizations, systems, structures and careers (Lian et al., 2025). Meanwhile, Selo Sumarjan formulated culture as all the results of the work, feelings and creations of society. The work of society produces technology and material culture and physical culture in an effort to master the surrounding nature. Feelings that encompass the human soul, embody all the rules and values of society in a broad sense. It includes ideology, spirituality, art and all human knowledge, technology (Purnanto & Ardhian, 2021). Sagala states that “culture describes the way we do things, so culture is a concept that arouses interest and concerns the way humans live, learn, think, feel, and believe and strive for what is appropriate according to their culture” (Maimun et al., 2020).

Meanwhile, according to (Daryanto, 2015) also describes culture as a social factory that binds community members and their institutions through a set of goals and values provided by the community's culture itself. It is also better known as consensual and holistic. The development of an East Javanese cultural introduction learning application through Glideapps entitled "Ej Culture" has a

very important role in increasing public knowledge about local culture. One of the main roles of this application is as an interactive educational media. By utilizing technology, this application allows users to learn about various aspects of East Javanese culture, such as identity, traditional clothing, typical foods, and traditional dances, in a more interesting and accessible way. This is expected to increase public interest, especially the younger generation, to get to know and preserve their regional culture (Mat et al., 2024).

In addition, this application also functions as a means to strengthen cultural identity. In an era of increasingly rapid globalization, many local cultures are threatened with extinction or forgotten. With the "Ej Culture" application, users can better understand and appreciate their own cultural heritage. This application presents relevant and interesting information, so that users can relate the material learned to real conditions in their environment. This will help build a sense of pride in local culture and encourage users to contribute to its preservation (Ningtyias & Kurrohman, 2020).

Another role of this application development is as a tool to improve the learning process. This application is designed with an attractive and user-friendly appearance, so that users can easily access the information presented. By using interactive learning methods, users not only get information passively, but can also actively participate in the learning process. This is expected to improve understanding and retention of the material being studied, as well as make the learning experience more enjoyable (Wardana & Setiarto, 2024).

Furthermore, the “Ej Culture” application also plays a role in facilitating collaboration between various parties, such as academics, artists, and the general public. By involving various stakeholders in the development of the application, it is hoped that richer and more diverse content can be created. This collaboration can also open up opportunities for other activities, such as workshops, seminars, or art performances related to East Javanese culture (Wahyudi et al., 2024). Thus, this application not only functions as a learning tool, but also as a platform to strengthen the network of communities that care about culture.

Finally, the development of this learning application also plays a role in supporting further research and development in the field of culture. With this application, researchers and developers can collect data and feedback from users regarding the effectiveness of the application in conveying information (Rahmawati et al., 2021). This data can be used to make improvements and develop new features that are more interactive and informative. Thus, the "Ej Culture" application is not only a useful learning tool, but also contributes to the development of science and technology in the field of culture.

The background of the research "Development of an Introduction to East Javanese Culture Learning Application Through Glideapps Titled 'Ej Culture'" departs from the fact that local culture, especially East Javanese culture, is increasingly threatened by the influence of globalization and modernization (Saengduenchay & Noenthaisong, 2023). Many young generations are less familiar with and appreciate their cultural heritage, which can result in the loss of cultural identity. In this context, technology-based learning applications are expected to be a solution to introduce and preserve East Javanese culture in a more interesting and interactive way (Yuwono et al., 2025).

However, there is information that is not yet known and often ignored, namely the challenges in developing effective learning applications. Some previously existing applications may not have succeeded in attracting user interest or not presenting accurate and relevant information. This shows that not all learning applications can meet the expected educational goals, and there is a risk that the applications developed will not be used optimally by the community.(Setiawan, H., & Rahmawati, 2020). Therefore, it is important to conduct in-depth research on user needs and preferences in the context of cultural learning.

The statement that shows information that contradicts the purpose of this study is that although technology can be an effective tool for learning, not everyone has equal access to it. Some areas in East Java may still experience limitations in terms of internet access and technological devices, which can hinder the use of this application. This raises questions about the extent to which this application can reach all levels of society and provide the expected benefits (Istanti et al., 2025).

Unknown information related to this study includes how users will respond to this application after use. Can this application really increase public knowledge and interest in East Javanese culture? In addition, there has been no research that specifically measures the effectiveness of Glideapps-based learning applications in the context of local culture. Therefore, this study is expected to provide new insights into the use of technology in cultural education.

The reality that has not occurred in this study is that there is no learning application that is specifically designed to introduce East Javanese culture with an interactive and interesting approach. Although there are several educational applications available, not many focus on local culture in an innovative way. This study aims to fill this gap by creating an application that is not only informative but also fun to use (Laely et al., 2025).

The novelty of this study lies in the approach used in application development. By utilizing the Glideapps platform, this study offers a new way of creating learning applications that are easily accessible and can be customized to user needs. In addition, this study also focuses on developing relevant and interesting content, so that it is expected to increase public interest in East Javanese culture. The "Ej Culture" application can be an effective tool in introducing and preserving East Javanese culture in the digital era. This study will explore various aspects, from application design, content presented, to user responses to the application. Thus, this study does not only focus on application development, but also on its impact on society (Nugroho et al., 2021).

The purpose of this study is to develop an effective and interesting learning application to introduce East Javanese culture, and to evaluate the practicality and effectiveness of the application in increasing public knowledge. With this goal, it is expected that the "Ej Culture" application can be a useful alternative media in the process of learning culture.

The research gap in this study can be seen from previous research entitled "Development of Mobile-Based Learning Applications for Introduction to Local Culture" by (Rina Sari, 2021). The study highlights the importance of technology

in education, but does not specifically discuss East Javanese culture or use the Glideapps platform. Thus, this study seeks to fill this gap and provide new contributions to the field of cultural learning application development.

II. METHODOLOGY

This study aims to determine the level of validity based on the practicality of the learning application about East Javanese Culture if used in a learning and is expected to realize a more interactive learning process. Based on this objective, the method used is Research and Development and adapting the ADDIE model. ADDIE is one of the learning design models that is used as a guide in building training program tools and infrastructure, dynamic, and supports the performance of the training itself (Gumanti, T. A., 2016). Research procedures in Research and Development by adapting the ADDIE model according to(Branch, 2009)are as follows.

a. Analyze Stage (Analysis) The analysis stage is carried out by reviewing and searching for the data needed to develop the East Javanese Culture learning application using observation techniques on current environmental conditions.
   1) Analysis of technological progress, the development of which is now very real so that the use of technology can no longer be avoided, including in the world of education.
   2) Analysis of Indonesia's natural wealth, namely having abundant biodiversity, especially flora, one of which is spice plants, makes Indonesia known as the largest spice producing country in the world.
   3) Marketing analysis of learning applications about East Javanese Culture which is useful in increasing public knowledge about East Javanese Culture such as East Javanese Identity, Traditional Clothing, Typical Food, Traditional Dances, etc. In addition, the use of this learning application is also useful such as having an impact on the general learning process of users because later users will be able to relate the material being studied to real conditions in their environment, so that it will help users understand other learning materials.

b. Design Stage (Design/Planning)

At this stage, a design or creation of a design will be carried out on the East Javanese Culture learning application system according to the results of the analysis stage. This design stage is carried out with the hope that application users can access the material or information presented quickly and easily. The appearance of this East Javanese Culture learning application requires a design that is as attractive as possible with the aim that application users feel comfortable and enthusiastic when using it. Creation of the East Javanese Culture learning application via the GlideApps web. Thus, in creating this application, you only need to create a design regarding the application model that will be created. The following is the appearance of the GlideApps web which can be downloaded via its official website.

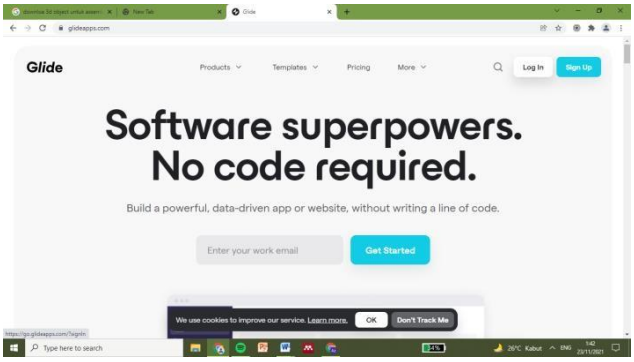

Figure 2. Glideapps Official Website

c. Develop Stage (Development)

The development in this study is the process of creating an East Javanese cultural learning application according to the established design. The creation of this application uses the GlideApps web. Entering data in the form of material to be presented. - Setting user access rights in the application.

d. Implementation Phase (Implementation/Direct Trial)

This stage is a trial step on the learning application This stage is a trial step on the East Javanese cultural application that has been created through the development stage. Testing is carried out on the general public who act as application users. Testing for this application uses an assessment instrument in the form of a questionnaire based on existing application standards.

1) Conduct a trial accessing the application on users directly.
2) Conduct testing on the validation process or application feasibility on users using a questionnaire assessment instrument.

e. Evaluate Stage (Evaluation/Assessment)

The evaluation stage is carried out based on data that has been obtained through the implementation stage which is an assessment and trial process. The results of the evaluation will be processed to determine the feasibility of the augmented reality-based spice and herbs learning application.

1) Processing data from questionnaires that users have filled out about the suitability of the application.
2) Make revisions if there are discrepancies or low levels of feasibility.

The data collection technique in this study used quantitative techniques through questionnaires or assessment sheets regarding learning applications given to the general public as many as 51 people from various professional statuses, such as students, students, and workers. The research instrument used as a measuring tool for product assessment refers to the Augmented Reality Teaching Platform (ARTP) standard, which includes: (1) Ergonomic Quality, (2) Learning Quality, and (3) Hedonic Quality (Pribeanu, Balog & Iordache, 2017).

The assessment standards are measured/assessed by respondents using a Likert assessment scale.

To analyze the data from the assessment sheet, the researcher used the analysis as in Table 1. Table 1. Respondent Assessment Scale Assessment Criteria Weight Value Bad 1 Less Good 2 Good 3 Very Good 4 Source: (Riduwan, 2015). After the respondents filled out the assessment sheet, the evaluation stage was carried out based on the data obtained through the implementation stage which is the assessment and trial process.

The evaluation results will be processed to determine the feasibility of the East Javanese Culture learning application - Processing data from questionnaires that have been filled out by users about the feasibility of the application. - Making revisions if there are any discrepancies or low levels of feasibility. The data collection technique in this study used quantitative techniques through questionnaires or assessment sheets regarding learning applications given to the general public as many as 10 people from various professional statuses, such as students, students, and workers. The research instruments used as measuring tools for product assessment are Application Appearance, Smoothness of Use, Presentation of Material, and Benefits felt by Application users. The assessment standards are measured/assessed by respondents using a Likert assessment scale. To analyze the data from the assessment sheet, the researcher used an analysis as in Table 1.

Table 1. Respondent Assessment Scale

Assessment criteria	Weight of Value
Not good	1
Not good	2
Good	3
Very good	4

Source: (Riduwan, 2015)

After the respondents have completed the assessment sheet using the assessment scale as in Table 1, which is used as a reference, the total score of the respondents' answers can be calculated using the formula as in Table 2 below.

Table 2. Formula for Calculating Respondents' Total Score

Not good	nx 1
Not good	nx 2

Good	nx 3
Very good	nx 4
∑Respondents' Answers	. . . . .

Source: (Riduwan, 2015)

Then, to determine the validity value based on practicality with a percentage value, this can be done by dividing the total score from the respondents' answers, so that the following formula is obtained.

$$Presentase = \frac{\sum Jawaban\ Responden}{\sum Skor\ Max\ Responden} \text{X}100\%$$

Source: (Riduwan, 2015)

If the rating results (percentage) have been determined, the next step is to draw conclusions about validity based on the practicality of the learning application by adjusting the percentage results with the percentage criteria shown in Table 3 below.

Table 3. Percentage Assessment Criteria

Assessment criteria	Percentage
Invalid	25% to 43%
Less Valid	44% to 62%
Valid	63% to 81%
Very Valid	82% to 100%

Source: (Sugiyono, 2015)

III. RESULTS AND DISCUSSION

The product developed is an application for learning East Javanese Culture. This learning application contains materials such as the identity of the province of East Java, such as explaining the capital city of East Java, population, area, etc. Shown in Figure 2.

This application also explains about the culture in East Java such as traditional dance, traditional food, traditional performances. Shown in figure 3.

Figure 2. East Java Identity

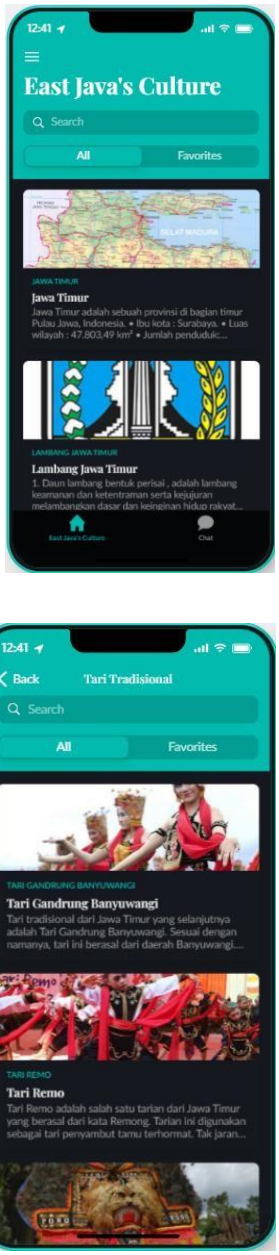

Figure 3. East Javanese cultural material (Traditional Dance)

To determine the quality of the application that has been created whether it has achieved validity based on practicality in accordance with the standards, direct testing and filling out of questionnaires to the relevant respondents were carried out. Respondents involved in this test were the general public as many as 10 people from various. The results of the study for validation based on the practicality of the learning application were carried out by 10 respondents. The validation results in the form of percentages are in Table 4, which consists of 4

main aspects, namely Application Appearance, Smoothness of Use, Presentation of Material, and Benefits felt by application users.

Table 4. Learning Application Validation Results

Aspect	Rating Results (%)	Criteria
Convenience of Application Display when used	90%	Very Valid
Smooth Usage of Application	100%	Very Valid
How to Present Material	80%	Very Valid
Benefits felt by application users	80%	Very Valid
Average of All Aspects	87.5%	Very Valid

Table 4. Shows validation results based on the practicality of the East Java Culture application by respondents. The Comfort aspect of the application display when in use gets a rating of 90%. This proves that the East Java Culture Application "EJ Culture" has good graphics and balanced material placement so that application users feel comfortable and easy to get all the information delivered. The aspect of smoothness when the application is used gets a rating of 100%, meaning that all users do not feel any obstacles or lags when using the application. The aspect of material presentation gets a rating from respondents of 80%, which means that the placement of information, images, and letter shapes is good enough to use. The last aspect, namely the aspect of benefits felt by users after using the EJ Culture application, gets a rating from respondents of 80%, where this application is able to convey information and the first purpose of creating the application.

From Table 4. and Figure 4. it can be observed that the validation results of the learning application get a rating with a percentage of 87.5%, which is included in the Very Valid criteria based on practicality. Thus, it can be concluded that this East Javanese cultural learning application is very valid based on practicality, so it is good if used in learning.

IV. CONCLUSIONS AND RECOMMENDATIONS

Based on the validation results obtained in the study "Development of East Javanese Cultural Learning Applications Called "EJ Culture"" it can be concluded as follows. From the data from the validation analysis of the learning application, the average final percentage was 88.55% with the criteria Very Valid based on practicality. Reviewed from the Comfort aspect on the application display when it is being used, it gets a rating of 90%. This proves that the East Javanese Cultural Application "EJ Culture" has good graphics and balanced material placement so that application users feel comfortable and easy to get all the information presented. The aspect of smoothness when the application is used gets a rating of 100%, meaning that all users do not feel any obstacles or lags when using the application. The aspect of material presentation gets a rating from respondents of 80%, which means that the placement of information, images, and letter shapes is good enough to use.

The last aspect, namely the aspect of benefits felt by users after using the EJ Culture application, received a rating from respondents of 80%, which means that this application has been able to convey information and the first purpose of creating the application. After observing the description above, it can be concluded that the East Java Culture learning application called "EJ Culture" is very valid based on practicality so that it is good if used in learning. This study is only limited to determining the validity based on the practicality of the learning application through the validation process by filling out the assessment sheet after conducting a product trial process in the form of an application.

This learning application is expected to be used properly, namely as an alternative media to carry out the learning process regarding biodiversity in Indonesia, especially herbs and spices. Researchers realize that there are still many opportunities that can be done to further improve the development of this East Javanese Culture learning application, so that it becomes a better, more useful, and more interactive learning application. In further research, researchers are expected to be able to enrich the application features, such as adding videos so that they do not only use text to explain the material, so that the learning process is not monotonous and more interactive. In addition, enriching the material and increasing the types of culture, as well as adding objects in the learning application so that the material presented is more complex and complete.

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