Development of a Digital Catalog for the Kamal Arjasa Jember Site and Its Use as a Source of Learning the History of the Millennial Generation

A Fajarini* and Musyarofah1
1IAIN Jember, Jalan Mataram 01 Mangli Kaliwates Jember Indonesia

*anindyafajarini@iain-jember.ac.id

Abstract. History learning is often seen as imaginative and unreal learning for students. Interactive media is needed by educators in cultivating students' awareness for society through an understanding of historical and cultural values. In the village of Kamal Arjasa, there are many megalithic remains that can be used as a source of learning. The development of a digital catalog based on an android application about Megalithic Sites in Kamal Village, can be an alternative in efforts under preserve historical heritage. This study uses the research and development method with Sutopo's multimedia product development model. The findings of the study show that, it was identified 43 historical relics had been well cared for and moved at the Duplang Site while 24 historical relics had not been moved (in situ). This data is used for developing digital catalog products. Product trials by experts and early stage trials showed 86% results and student response results showed an applied rate of 92%. Accordingly, the digital catalog of Megalithic sites in Kamal Village is valid or suitable and can be used for learning social studies at SMP / MTs. especially material about Indonesia's pre-literal period and its influence on the life of the immediate environment.

1. Introduction

Jember regency is not only famous for tobacco plants and JFC ( Jember Fashion Carnival ), but also famous for it's -site megalithic precisely located in the village of the District Kamal Arjasa. Tinggalan megalitik spread almost all over the Indonesian archipelago, among others, found on the island of Sulawesi, Sumatra, Java, Nusa Tenggara, Bali and Lombok. The megalithic remains have several variations, such as dolmen, menhirs, punden terraces, stone tables, roads. These megalithic cultures develop in accordance with local cultural features in present conditions. [9]

Located on an area of no more than 10x10 meters, the Duplang Site keeps a long history of ancient human civilization in the archipelago. Sudarman Abdur Rahim, maintainer of the Duplang site, said that this site emerged in the 10th century, alternating with the emergence of Borobudur Temple in the 9th century. Many believe this has existed since the 4th century. And indeed here is one of the ancient settlements in East Java, apart from Kendal and Trowulan. William Haviland said that the sites are places where archaeological remains were found in the dwellings of ancient human beings. Sites are usually determined based on a survey of an area". [12] The Duplang site opens the eyes of the world that the human civilization of the archipelago has existed for centuries. The Duplang site, Indonesia's heritage wealth, is a gift that must be preserved as a form of respect for the cultural roots of Indonesian people. Cultural heritage is cultural heritage which is material in the form of Cultural Conservation Objects, Cultural Conservation Buildings, Cultural Conservation Structures, Cultural Conservation Sites, and Cultural Conservation Areas on land and / or in water where its existence needs to be preserved because it has important values. Cultural Conservation Sites are locations on land and / or in water containing Cultural Conservation Objects, Cultural Conservation Buildings and / or Cultural Conservation Structures as the result of human activities or evidence of past events. history, science, education, religion and / or culture through a process of determination. [10]

Conservation is a dynamic effort to maintain the existence of a Cultural Conservation and its value by protecting, developing and utilizing it. [10] The empirical facts about the preservation of megalithic sites in Kamal Village are only conceptual. There has been a concept of how to protect the site, for example by making a guardrail on the site area, however, there are still some megalithic remains that have not been given a guardrail or label. Development and utilization efforts have also been made, for
example for cultural tourism and learning, however, not many people come to this site other than those who have special purposes such as archaeologists or researchers.

Based on the results of interviews with Mr. Abdur Rahim, there is a lack of visitors because not many people know about the existence of megalithic sites in Kamal Village, even the residents of Jember themselves. In addition, the site, which is a relic of the ancient archipelago, is less familiar to young people, which in fact allows them to explore, travel and get to know the history of this site like other tourist attractions in the Jember region. Mr. Rahim said that if this site was favored by the younger generation, indirectly the sustainability of this site would be preserved for the next period even if only by knowing its existence. What was said by Mr. Rahim is a bit contradicting the current conditions of the millennial era.

Generation Millennials are the generation born between the years 1981-2000, or are currently aged 15 years to 34 years. Millennials generation (also known as Milennial Generation or Generation Y) is the demographic group after Generation X, while Generation Z is the generation born after 2000 to the present. [4] The word Millennial generation was first recognized by the Hungarian sociologist, Karl Mannheim (1893-1947). In his book "Diagnosis of Our Time" he identified a post-WWII generation. In the 1980s in Europe, the flow of postmodernism began to develop. In generation X there was a complex first change, in generation Y there was a second very complex change, namely there were many digital / gadgets and in generation Z there was a third change, which was to answer the complexity of challenges. The millennial generation has its own characteristics, namely, they were born at a time when color TV, cellphones and the internet were introduced. So that this generation is very proficient in technology.

In the world of social media, the millennial generation dominates when compared to generation X. With their capabilities in the world of technology and existing facilities, not many millennials are aware of the opportunities and opportunities in front of them. Generation of Millennials tend to be indifferent to the social conditions around them as political or economic developments in Indonesia. Most of the millennials generation only care about boasting a lifestyle of freedom and hedonism. Having an unrealistic and too idealistic vision, what is important can be style. [4]

The existence of the millennial generation is an opportunity and a challenge in itself, especially for history learning which has the aim of fostering awareness and concern for society or the environment, through understanding the historical values and culture of society. It is estimated that in 2025 there will be a large population change known as the "Demographic Bonus", which means that the number of productive age will be greater than the number of elderly people and children. This demographic bonus is a challenge for a teacher and prospective teacher because the number of productive age population affects the quality of Indonesian education. The demographic bonus for the world of education is the biggest challenge because in this demographic era there are generations Y and Z, where this generation is more fascinated by gadgets than reading books. Many children watch only for playing on computers, cellphones, and other gadgets instead of reading books. Based on research, 43% of Indonesia’s population graduated from elementary school and reading tests conducted in 61 countries, Indonesia is ranked 60th out of 61 countries. The reading rate of Indonesia's population is lower than that of Vietnam. This technological advancement has a negative impact as well as a positive impact. The positive impact of advances in science and technology is easy access to information and easy communication with those who are far away, but as for the negative impact, namely the increased feeling of laziness to read books because of the easy access to information. Gadgets are important, but if you can't use them properly, they will become “Garbage” trash. The year 2025 or 2045 is known as the "Golden Age" where the task of education is to prepare professional teachers who have the knowledge, skills and commitment. Meanwhile, the task of teachers and prospective teachers is to prepare skills to face the challenges of the 21st century. [11]

There are several previous studies that discuss the existence of the Kamal Arjasa Site. First, Dina Hidayah's research (2013) on the Use of Megalithic Sites in Kamal Village, Arjasa District, Jember Regency as Cultural Tourism Objects. This study uses historical research methods, where the results of this study discuss the potential that exists in the megalithic sites of Kamal Village, including the potential for cultural tourism and other supporting tourism such as nature tourism. The second research study is the writing of Siti Nurul Adimah et al. (2013) about the Duplang Site in Kamal Village, Arjasa District, Jember Regency: History and Its Use as a Source of Historical Learning. From this paper, it can be concluded that the Duplang Site in Jember Regency has a high historical value so that
it can be used as a source of historical learning. From these two studies, it is clear that the Kamal Site has potential historical value and is useful as a source of historical learning. In relation to digital catalogs, there is a study by Fitro Nur Hakim, et al regarding the Design of Digital Catalogs at the UMKM Embroidery Center in Padurenan Kudus Village. By designing a digital catalog at the UMKM Embroidery Center in Padurenan Kudus Village, MSMEs are able to increase opportunities by combining digital catalogs with e-commerce websites, developing tablet, mobile-based applications, plus email marketing features and strengthening transaction opportunities with potential customers. By designing a digital catalog, MSMEs are able to show products clearly, can be linked to the web and social media, are easy and fast to carry anywhere, can be enriched with multimedia, and can be equipped with detailed information about the embroidery products being sold. Of the three studies that found ideas and opportunities to overcome the problems of the popularity of objects of cultural heritage among young millennial to develop a catalog digital Megalithic Sites in the village of Kamal Arjasa Jember.

The media catalog has one or more databases as a large part of the back end. The product catalog will be organized in a database. Other content can also be stored in certain databases. The function of using a database or database makes it much easier to make changes. When something changes in the specifications, for example, an increase occurs in a product, then you only need to make changes in the database, so all pages showing that specification will change too, no need to change each page manually. In accordance with the design of the media catalog using the Interactive CD method and offline, the database design is not like the online catalog media. [8]

Learning resources are anything that can provide information in learning. Learning resources are defined as information that is presented and stored in various forms of media, which can assist students in learning, as an embodiment of the curriculum. [1] It is not limited to whether it is in print, video, software, or a combination of these that students and teachers can use. Learning resources can also be defined as any place or environment, people, and objects that contain information that becomes a vehicle for students to carry out the behavior change process. The definition of learning resources is very broad. But in general there are several classifications of learning resources. AECT (Association of Education Communication Technology) classifies learning resources into six types, namely message, people, materials, device, technique, and setting. [2]

Based on some of the explanations above, several conclusions are obtained that a special strategy is needed to introduce the existence of cultural heritage sites, especially megalithic sites in Kamal Arjasa Village. There is also a need for interactive media that can be used by history teachers in fostering awareness and concern for society or the environment, through an understanding of historical and cultural values among the Jember millennial generation. Seeing this, the development of an android application-based digital catalog of megalithic sites in the village of Kamal Arjasa Jember has become an alternative for the preservation of historical heritage. This catalog was also developed as a learning resource that can be used by history teachers in the millennial era.

2. Methods
This type of research is a research and development (R & D). The model used in the development of digital catalog media is the multimedia product development model from Sutopo (2003). The multimedia development methodology consists of 6 stages, namely concept, design, material collecting, assembly, testing and distribution as shown below: [5]

![Figure 1. Image of Multimedia Development Model](image-url)
2.1 Product Trial

In this section, in sequence, it is explained about the trial design of the validation subject, types of data, data collection instruments and data analysis techniques.

2.1.1 Trial Design

The trials in this study included content and presentation feasibility tests, small-scale tests and early-stage field trials and main field trials. Validation was carried out by the test subjects by filling in an instrument in the form of a questionnaire and providing comments and suggestions on product development. The researcher also did interviews and effectiveness of the use of digital catalogs from the megalithic relics of the Kamal Arjasa Jember Site. The trial begins with expert validation of the teaching materials. These experts are instructional media design experts, history material experts and linguists.

After the product goes through validation by product experts, it is tested at MTs Ashri Jember. The selection of students is based on report cards and on recommendations from the class teacher and represents students with high, medium and low average ability. The results of small-scale trials are used as a consideration for improving product development. This trial is called the early stage trial. Based on the initial scale trial, the product was repaired.

Products that have been tested in the early stages are then tested on all class VIIB MTs students, Ashri. This trial is called the main field trial. Based on the main field trials, a product was created in the form of a digital catalog of the megalithic relics of the Kamal Arjasa Jember Site.

2.1.2 Subject Try

Subject try or validator on research is as follows: (1) a group of experts consisting of experts design multimedia, material experts history, and teacher of history, (2) a group of users to test try unlimited consisting of teachers of history and students.

2.1.3 Type of Data

Types of data obtained from trials in research and development consist of qualitative data and quantitative data. Qualitative data were obtained from suggestions and input from instructional media design experts, material experts, linguists, social studies teachers and students. Quantitative data were obtained from validation questionnaires for instructional media design experts, material experts, linguists, behavioral observations, self-assessment and student learning outcomes. Data obtained from experts in the form of qualitative and quantitative data are used to determine the validity of the teaching materials developed, while data obtained from teachers and students through applied questionnaires, behavioral observations, self-assessment and learning outcomes are used to determine the applicability and effectiveness of the developed modules.

2.1.4 Data Collection Instruments

The data collection instrument was used to collect data so that it could be used to determine the level of validity, level of applicability and level of effectiveness of SMP / MTs. who were tested.

2.1.5 Data analysis technique

The data analysis technique used in this research is descriptive analysis technique. Descriptive data analysis was used to analyze data in the form of notes of suggestions, criticism and responses / comments obtained from validation questionnaires and the results of interviews with teachers. Descriptive statistical analysis was used to analyze data in the form of scores from the validation questionnaire and the teacher response questionnaire.

2.1.5.1 Analysis of the Validity of Teaching Materials and the Effectiveness of Teaching Materials

Data on the feasibility of the digital catalog of the megalithic relics of the Kamal Arjasa Jember site were obtained from computer experts, content experts and teachers. The data in the form of a score is then analyzed by descriptive percentages using the formula from the following: [3]

\[ V = \frac{\Sigma TSEV}{\Sigma S - \max} \times 100\% \]

Information:
- \( V \) = Validity
- \( \Sigma TSEV \) = Total empirical validator score
- \( \Sigma S - \max \) = total expected maximum score
100% = Constants

After the percentage results are known, the next step is to interpret the percentage results based on predetermined criteria. These criteria can be seen in Table 3.2 below.

| Criteria | Qualification | Information |
|----------|---------------|-------------|
| 75.01% - 100.00% | Very valid | No revision |
| 50.01% - 75.01% | Quite valid | Minor revision |
| 25.01% - 50.01% | Invalid | Big revision |
| 0.00% - 25.01% | Very invalid | Big Revision |

Source: Akbar and Sriwiyana (2011: 207)

3. Results and Discussion

3.1. Condition of legal megalithic sites in the village of Kamal Arjasa, Jember

The condition of the megalithic site in the village of Kamal Arjasa Jember is known by conducting direct data collection in the village. Data collection begins by first visiting the manager/administrator of Mr. Abdul Rahim's Duplang Site, where on that site there are several megalithic relics that have been moved. Pak Rahim explained about the general description of the condition of the relics, both in situ and those that have been moved. Pak Rahim also showed a sketch of a map of Kamal Village complete with information on the whereabouts of megalithic remains. This map sketch guides researchers to trace the megalithic remains in Kamal Village.

The first search was carried out by observing the condition of the Duplang Site. Based on Pak Rahim's explanation as well as the results of observations on the site, 43 historical relics were recorded and documented which had been well cared for and moved to the Duplang Site. The details are as follows:

| No. | Types of Megalithic Relics | Jumlah |
|-----|---------------------------|--------|
| 1.  | Single Kenong Stone       | 37     |
| 2.  | Twin Kenong Stone         | 2      |
| 3.  | Stacking Kenong Stone     | 1      |
| 4.  | Dolmen                    | 1      |
| 5.  | Menhir                    | 2      |
|     | Total number              | 43     |

After tracing the megalithic remains at the Duplang Site, the researcher and Mr. Rahim headed to the relics that had not been moved. The first sweep was carried out at the location of Batu Kenong Mata Angin. Based on Mr. Rahim's explanation, the existence of Batu Kenong Mata Angin can be a pointer to the cardinal directions (north, south, west and east). From the location of Batu Kenong Mata Angin, the researcher was accompanied by Mr. Rahim to explore other locations. Recorded and documented 24 historical relics that have not been moved at the Duplang Site in Kamal Village. The details are as follows:

| No. | Types of Megalithic Relics         | Jumlah |
|-----|------------------------------------|--------|
| 1.  | Dimples Stone                      | 2      |
| 2.  | Dolmen                             | 9      |
| 3.  | Umbrella Stone                     | 1      |
| 4.  | Stone Kenong Eyes of the Wind      | 1      |
| 5.  | Single Kenong Stone                | 7      |
| 6.  | Stone Sculpture                    | 1      |
| 7.  | Gamelan stones                     | 1      |
3.1.1 Kenong Stone
The kenong stone is a relic of prehistoric times in the form of a cylindrical stone with a protrusion at the top. Kenong stone is a stone offering to spirits or spirits for people who have died. For the Jember Regency area, this stone is often found in Kamal Village. Based on the top of the rock outcrops form kenong Dijumpai three protrusions form are:

a. kenong stone which has a protrusion at the top of a round shape;
b. kenong stone that has a protrusion at the top of a sharp shape;
c. kenong stone that has a protrusion at the top of the box shape.

In general, the size of each kenong stone is not much different, while the location and position are sporadic and some are in groups (usually 4 cardinal points). The detailed shape of a kenong stone is a monolith formed in a vertical semicircle with one or two tops.

In this Kamal site, there are two types of kenong, namely kenong stone with 1 protrusion (single) and twin kenong stones with 2 protrusions. The kenong stone has been arranged and some have been moved from its original place. The kenong stone symbolizes a form of offering to the spirits of the ancestors and is a cult made around the 4th century AD. The single kenong stone is a sign of burial place, while the twin kenong stones are the romps or wooden plinths.

3.1.2. Dolmen
A table made of stone which serves as a place to place offerings for worship. Dolmen is a stone table, which is a stone arrangement consisting of a wide stone which is supported by several other stones so that it resembles a table shape. [8] The legless dolmen functioned as a pelinggih among advanced megalithic societies and were used as seats by tribal leaders or chiefs, and were seen as sacred places for conducting meetings and ceremonies in relation to the worship of ancestral spirits. Thus the legless dolmen can function as a spiritual pelinggih or as a place of offerings, namely as an altar to place offerings or sacrifices for ancestral spirits.

3.1.3. Menhir
In Jember Regency, menhirs are only found in Kamal Arjasa Village, namely the Duplang and Kendal Sites. According to Von Heine Geldern (in Poesponegoro and Notosusanto, 1993: 224) that the megalithic era is divided into two waves, namely: 1) Old megaliths represented, among others, by menhirs, stone steps and symbolic-monumental sculptures together with supporters of the pickaxe culture estimated to be 2500-1500 BC, and entered in the Neolithic era; 2) The young megaliths are represented, among others, by stone coffins, pseudo dolmen, and sarcophagi, which flourished in the age known to bronze and dated from around the beginning of the first millennium BC to the first centuries AD.

Thus, the inhabitants of the Jember region can be estimated to have existed since 1500 BC, when young megaliths spread in Indonesia. During this young megalithic era, this development in Indonesia was supported by the Dongson Culture (Deutro Melayu) which produced stone coffins, dolmen, waruga sarcophagi and various forms of statues that were dynamic in their situation.

3.1.4. Stone Sculpture
Basically, the function of stone statues is the same as menhirs, which are used for religious purposes and have a symbolic meaning as a means of worshiping ancestral spirits.

3.1.5. Stone Inscription
The stone inscription in the Arjasa Jember Kamal Site is identical to the etched stone. In the research conducted by Slamet Sujud Purnawan Jati & Deny Yudo Wahyudi, it is explained that the scratched stone is a large monolith on the surface of which there are scratches made by hand-made grinding which are thought to have a special purpose for the maker or the community. [9]
3.2. Development of a Digital Catalog of Megalithic Sites in Kamal Arjasa Village, Jember
3.2.1. Concept
At this stage, a study of the needs of students related to social studies learning is carried out. Students, who are mostly part of the millennial generation, want them to be able to study anywhere with ease, fast and interesting. Based on the results of interviews with teachers and several students at MTs. ASHRI, obtained data that both teachers and students want social studies learning that is not boring. Based on the results of interviews conducted with social studies teachers, it is known that the method used has tried to actively involve students, but it has not been maximized because students still feel less interested in social studies, especially history related to the legacy of the Prehistoric Period. Based on this, we need a way to increase the enthusiasm of students in learning social studies, especially historical material. One of the things that can be done is to develop a social studies learning media that is preferred by the millennial generation.

In this study, a literature study was also conducted by examining the curriculum used in the school, namely the 2013 curriculum. Researchers conducted an analysis of core competencies and basic competencies about Prehistory. Based on the results of the analysis, it is known that prehistoric material is related to KD 3.4, namely understanding the chronology of change and continuity in the life of the Indonesian nation in the political, social, cultural, geographical and educational aspects from the praaksara period to the Hindu-Buddhist and Islamic era and KD 4.4 Describing the chronology change, and continuity in the life of the Indonesian nation in the political, social, cultural, geographic and educational aspects from the pre-literacy period to the Hindu-Buddhist and Islamic period.

Based on the problems found in the observation, one alternative solution for the implementation of social studies learning in order to support the achievement of learning objectives is to develop learning media in the form of an android-based digital catalog of megalithic heritage.

After determining the draft of the development product to be designed, a product feasibility test instrument was developed which was given to application design experts, material/content experts, teachers and students which were used as product revision considerations. In addition, supporting instruments were also developed, such as teacher and student response questionnaires, and interview guides for teachers and students. The form of the instrument can be seen in Appendix 3 and Attachment 4.

3.2.2. Design
The product being developed is a digital catalog of the megalithic relics of the Kamal Arjasa Jember Site. This android-based catalog design is seen from the user interface design criteria and material design. [6] Interface design is used to describe the appearance of a machine or computer that interacts directly with the user. The design and arrangement of the interface needs to be considered in order to produce a good appearance. In developing this digital catalog, emphasis was placed on making the display attractive and easier for potential users. According to Schlatter, there are several components in developing an application that is easy to use.

a. Consistency: consistency of the user interface
b. Hierarchy: hierarchical arrangement of the interests of the objects contained in the application
c. Personality: the first impression seen on the application that shows the characteristics of the application.
d. Layout: the layout of the elements in an application
e. Type: typography used in an application
f. Color: the use of the right color used in an application.
g. Imagery: the use of images, icons, and the like to convey information in applications.
h. Controls and Affordances: elements of the user interface that people can use to interact with the system via a screen.

Instructions for preparing user interface designs in a mobile application vary depending on the operating system that is running it. In this case study, the application used is based on Android, so the reference for the preparation of research to be carried out is the Android design principles or better known as the material design guidelines. Here are some components of the material design guidelines that will be analyzed in the development of a digital catalog application in this study.
3.2.2.1. Layout

In the material design, layout elements dike categorize into five categories. Here are the categories of Android and its layout in the elements:

a. **Units & Measurement**: covers pixel density, density-independent pixels (dp), scaleable pixel (sp), and image scaling.

b. **Metrics & Keylines**: covers baseline grid, spacing, keylines, increment sizing, and touch target size.

c. **Structure**: cover UI region, Toolbars, App bars, bars System, Side nav, dan whiteframes.

d. **Responsive UI**: covers breakpoints, grids, interface behaviors, and patterns.

e. **Split Screen**: covers usage, behavior, and layout.

In this study, a layout will be developed with a size suitable for an Android cellphone screen with the appropriate size. In the catalog contents information using the font type of Arial.

3.2.2.2. Color

The colors used to grab the attention of the user should be strategically positioned and consistent use of colors will also help users understand the application. From the material design guidelines, the principle of using color for Android is to use a bold color as an appeal and be surrounded by softer colors as the main background, as well as accentuating shadows and bright colors to attract attention. Material design has provided a lot of guidelines for use in an application.

In this digital catalog application, the application logo uses a combination of red and blue on a white background. On the menu page, the colors used are the same, namely on a white background with a black font. For the menu color before clicking is blue. In the catalog menu, the name of the relic has a black background with a white font. In the detailed info there is a back menu with a red background so that the user can easily see this button. The description of the color proportions can be seen below.
3.2.2.3. Control

Control is anything that allows users to interact with data through the interface. A control, whether it's a button or a logo, must indicate that the user can interact with the control. The term control in Material Design is referred to as a component and includes a lot of control components in an application such as buttons, sliders, tabs, text fields, etc.

The logo for this application itself is a series of two letters K and D which describe the abbreviation for digital catalog. In this application logo there is also a logo from android, which means this application is an android application. Below the acronym is a phrase that reads "DIGITAL CATALOG" and "PENINGGALAN MEGALITHIKUM" to explain that the application is a catalog of megalithic relics. The logo for the digital catalog is as follows.

![Figure 2. Digital Catalog Displays](image)

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![Figure 3. Digital Catalog Icons](image)

In this application there are 2 buttons on the main page menu, namely the "Info" and "Catalog" menu. The info menu contains general explanations of the digital catalog of Kamal Arjasa's Megalithic Relics, while the catalog menu contains pictures of megalithic relics on the Kamal Arjasa Site. The image can be clicked and contains detailed information on the relic accompanied by a back button to return to the previous menu page.
3.2.3 Obtaining Content Material (Material Collection).
This stage is the process for collecting everything needed in the project. Regarding the material to be delivered, then multimedia files such as audio, video, and images are included in the presentation of the multimedia project.

At this stage, the preparation of a digital catalog begins with an inventory and identification of the megalithic relics on the Kamal Arjasa Jember Site. Data collection begins by first visiting the manager/administrator of Mr. Abdul Rahim's Duplang Site, where on that site there are several megalithic relics that have been moved. Pak Rahim explained about the general description of the condition of the relics, both in situ and those that have been moved. Pak Rahim also showed a sketch of a map of Kamal Village complete with information on the whereabouts of megalithic remains.

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3.2.4 Assembly (Compilation and Manufacture).
Note that the text for subsection headings should be run into the text of the first paragraph. This stage is the stage where a multimedia project is produced. Materials such as multimedia files that have been obtained are then assembled and arranged according to the design. In this process, the ability of the experts is needed to get good results. The material that has been obtained from the previous development stage is then submitted to the expert who made the android application to be compiled into a digital catalog application of the megalithic relics on the Kamal Arjasa site.

The digital catalog logo is created using the Inscape application, which is to create a book logo with the KD (Digital Catalog) symbol on the right and an android symbol on the left which depicts an android-based digital catalog. Then do the following steps.

a. Collecting material from the word
b. Separating text and image information from word
c. Provide a liaison ID to identify text and image info
d. Compress images so that they are not heavy when running on android
e. Creating an html builder application to compile a web view from info text and image info using Visual Basic 2010. This is so that you can instantly create designs such as catalog pages without having to type one by one.
f. Create a Cordova project for the android platform
g. Change the contents of the default from cordova android
h. Which is composed of several parts, namely:
   Splashscreen (initial logo display when opening the application for the first time. This serves to ensure the application is synchronized with android device functions such as buttons etc.)
An introductory page that contains a summary of information adapted to the material in the word catalog that contains a list of catalogs with displays that have been made with Visual Basic 2010

Once composed then this app - compile / in - build / built in order to become the apk file. After becoming the apk file using the android full studio with processes generate keystore (ID application for identification applications in PlayStore) then these applications are ready to be uploaded to PlayStore. Before uploading to the Playstore, a Google Play Console account must be prepared. To created this account is required to pay for $35 USD use Master Card / PayPal etc. After the account is successfully created, several components are prepared, namely: 1) Apk file; 2) Application screenshot; 3) Featured image; 4) Application Icon. Then the application is ready to be processed in the Playstore.
At this stage an android-based application is formed in the form of a digital catalog of the relics of the Kamal Arjasa Jember Site Megalithic. Apart from being an Android-based application that can be downloaded via the Playstore, this product is also developed in html form which is packaged in a compact disc so that it can be used using a computer or laptop. The pictures of the two products are as follows.

![Digital Catalog](image1)

![Compact Disc](image2)

**Figure 4. The Pictures of the Two Products of Digital Catalog**

### 3.2.5 Testing (Trial)

#### 3.2.5.1 Product Validation Test Results

The development product prototype in the form of a digital catalog that has been completed will be prepared for validation by experts. The purpose of the product prototype in the form of a digital catalog is left to the experts to get useful feedback and suggestions for the improvement or improvement of the developed digital catalog. The results of the validation from these experts are used as the basis for revising the products to be produced. The following will be presented data from the trial results of material experts and design experts.

**a. Material Expert Trial Data**

Digital catalog of megalithic relics on the Kamal Arjasa Jember site, which deals with material about the life of the Praaksara Period. This material is intended for SMP / MTs students, and has an important purpose so that students can know that in the area around students there are megalithic relics that must be preserved and preserved. This is the reason for the need for material experts to assess and provide relevant input to the material presented in the teaching materials in the form of this digital catalog.

In this research, the researcher asked Musyarofah, M.Pd. to validate the prototype (initial draft) of the module and which will be tested. He is a lecturer who is an expert in the field of social studies.

From the data analysis of the material expert validation questionnaire, the percentage of validity was 86.67%. Based on the criteria used according to the Akbar and Sriwiyana formula, it can be concluded that the results obtained regarding the material in the digital catalog are very valid so that the product can be used without revision. However, various suggestions from these experts are still taken into consideration for revising this product before being tested on students.

**b. Expert Design Trial Data**

The digital catalog of the megalithic relics of the Kamal Arjasa Jember site was developed in the form of an android-based application. So, design digital catalog should be exactly in accordance with the criteria of a good application and easy to use by potential users. Based on these reasons, experts in the multimedia field are needed to assess and provide relevant input to this digital catalog. In this research, the researcher asked Totok Sudarmanto, S. Kom. to validate the prototype (initial draft) of the catalog that will be tested. He is an expert in computer programming.

From the results of the design validation questionnaire analysis, the percentage of validity was 80.90%. Based on the criteria used by the formula Akbar and Sriwiyana (2011: 207) concluded that their results are related to the design of a digital catalog is valid so that the product can be used. However, there are some suggestions from experts that are taken into consideration for revising this product before it is tested on students.

**c. Test Data by the Teacher**

This digital catalog was developed for SMP / MTs level students. Based on these reasons, social studies teacher assistance is needed to assess and provide relevant input to digital catalog products. In
this study, researchers berma KSud conduct trials in MTs. Ashri, so the researchers asked for the willingness of Mrs. Ana Nurin Ramadhanti, as a social studies teacher at MTs. this is to validate the prototype (initial draft) of the digital catalog that will be tested.

From the results of the analysis of the validation questionnaire for the teacher, the percentage of validity was 90 %. Based on the criteria used according to Akbar and Sriwiyana's formula , it can be concluded that the digital catalog is very valid so that the product can be used without revision. However, various suggestions and input are still taken into consideration for revising this product before it is tested on students.

3.2.5.2 Initial Field Trial Data

The initial field trial was carried out after the revision of the product design based on the validation results from the experts. From the expert validation test, a valid digital catalog of the relics of the Kamal Arjasa Jember site was obtained , then the initial field trials could be carried out . The initial phase of the trial was carried out on 6 MTs students. Ashri who has different academic abilities. From the results of this validation, data will be obtained whether the digital catalog developed is truly valid and suitable for learning.

At this stage, data about the trial response was also obtained in the form of responses that were filled in on the student response questionnaire to the module they were using. From the results of the analysis of the questionnaires, the average percentage of validity was 86 %. Based on the criteria used according to Akbar and Sriwiyana's formula , it can be concluded that the digital catalog is very valid so that the product can be used without revision. However, various suggestions from these students were still taken into consideration for revising this product before being tested in the main field trial stage.

3.2.5.3 Main Field Trial Results

The results of the main field trials can be carried out if the initial field trials have been revised. At this stage, the revised draft digital catalog will be tested and from the previous stage. The main field trial subjects were all students of class VIII B MTs. Ashri Academic Year 2019 /2020, amounting to 31 students. The steps for learning using this digital catalog are as follows.

a. Initial Activities

Learning begins with prayer activities and student attendance. The teacher explains about learning using a digital catalog . Furthermore, the teacher conducts apperception activities to explore students' initial knowledge of the topics to be studied. Apperception is done by inviting students to open the initial activity section of the module. The teacher then assigns students to follow the instructions in the module to make it easier for students to learn to useDigital catalog of megalithic relics Kamal Arjasa Jember Site .

b. Core Activities

In this activity students are asked to observe the megalithic relics in the digital catalog, then students are asked to group these relics and analyze the characteristics and functions of these relics. Next, asked to identify contextual problems related to the existence of megalithic relics and write down what is known in the problem, write down what is asked in the problem. Students are also directed to discuss to come up with ideas to find problem-solving strategies and do problem solving in groups, write down the steps and the results of problem solving.

Furthermore, students are asked to present and give opportunities to other students to ask questions or share the results of solving problems. Then the teacher checks and provides feedback on the results of student problem solving to help students reflect on the process and results of problem solving.

c. Final Activity

In the final activity students write down the conclusions of what has been learned. During the learning process, the teacher assesses attitudes and skills based on observations and assessments of the student activity process during learning such as discussions and presentations.

Field trials were observed and assessed by one IPS teacher . Ashri and observer. Observer observes the applicability of learning using a digital catalog and assesses students' processes, attitudes and skills during the learning process.
3.2.5.4 Student Response

Another indicator of the effectiveness of the digital catalog developed in field trials is student response. Student responses can be found through filling out student response questionnaires and interviews. The student response questionnaire aims to determine the response of students after learning by using the digital catalog of the megalithic relics of the Kamal Arjasa Jember Site.

Based on the results of the student response questionnaire analysis, the responses of 31 students to this digital catalog showed an average of 92%. According to the analysis study in chapter III, an average of 92% is in the very high category. This data is supported by the results of interviews with representatives of students. Based on the results of these interviews, it can be concluded that students generally feel happy when learning to use the digital catalog of the megalithic relics of the Kamal Arjasa Jember Site. It shows that the response given students after using a digital catalog of heritage megalithikum largest Arjasa Kamal Jember can support effectivity level of early learning.

3.2.5.5 Teacher Response

The teacher's response is also an indicator of the effectiveness of the digital catalog of the Kamal Arjasa Jember site megalithic relics learning developed in field trials. Teacher responses can be found through filling out teacher response questionnaires and interviews. The teacher response questionnaire aims to find out the response of the teacher after using the digital catalog of the Kamal Arjasa site megalithic relics in Jember.

Based on the results of the questionnaire analysis, the teacher's response to this showed an average of 93%. According to the analysis study in chapter III, an average of 93% is in the very high category. This data is supported by the results of direct interviews with the teacher. In the interview, the teacher explained that the use of digital catalogs from the megalithic relics of the Kamal Arjasa Jember Site is very helpful for teachers in learning social studies. According to the teacher, there are changes that appear both in terms of activeness, skills and changes in student attitudes in learning. This shows that the response given by the teacher after using the digital catalog of the Kamal Arjasa Jember site megalithic relics in learning can support a very high level of module effectiveness.

3.3 Utilization of the Digital Catalog of Megalithic Sites in the Village of Kamal Arjasa Jember as a Source of Learning the History of the Millennial Generation

History learning must be able to form meaning in the minds of students with their own interests and desires. [13] It is understood that in forming ideas, students need to work together with other people and the environment to build social research ideas so that those ideas mean something to students. The teacher acts as a facilitator in the creation of meaningful learning by planning and developing factual and contextual material.

Regarding the application of learning, the 2013 Curriculum recommends three main learning models in accordance with Permendikbud 103 of 2014, namely the Problem Based Learning model, the Project Based Learning model and the inquiry model. The three models are expected to build scientific behavior, social behavior and develop curiosity. The consequence in this case is that the learning materials provided in the classroom must be able to reach these standards. Material based on factual and contextual environmental problems for students can answer these expectations.

The study of the megalithic relics of the Kamal Arjasa Site can be a contextual material that can be developed in history learning or social studies. This discussion becomes an interesting topic and is close to the environment of students, especially SMP / MTs students in Jember. This material can be used in historical lessons of KD 3.4. Understand the results and cultural values of the Indonesian Praaksara community and their effects on the life of the immediate environment; KD 4.4 Presenting the results and cultural values of the Indonesian Praaksara community and their influences in the life of the immediate environment in writing. This material can also be used in social studies learning, especially KD 3.4. Understanding the chronology of change and continuity in the life of the Indonesian people in the political, social, cultural, geographic and educational aspects from the praaksara period to the Hindu-Buddhist and Islamic times. In addition, it is also related to KD 4.4. Describes the chronology of change and continuity in the life of the Indonesian nation in the political, social, cultural, geographic and educational aspects from the praaksara period to the Hindu Buddhist and Islamic periods.
The existence of an android-based digital catalog can make it easier for students everywhere to access this application, provided there is a smartphone as a medium. This application is also expected to bridge the problems of the millennial generation who tend to be more interested in using smartphones than reading or studying. It is hoped that through this digital catalog, the current generation can understand the cultural heritage of their ancestors, at least by getting to know the historical relics around the student’s residence. The long-term impact that is expected is, when there are still generations who know and know the existence of a historical relic, the legacy will be sustainable or will not be crushed by the times.

4. Conclusions

This chapter presents a description of the conclusions and suggestions related to the development of a digital catalog of the megalithic relics of the Kamal Arjasa Jember Site. The conclusions of data analysis and suggestions which are divided into suggestions for product use and development will be presented as follows.

4.1 Conclusion

In the explanation of the results of the data analysis above, it can be concluded that the development of a digital catalog of the megalithic relics of the Kamal Arjasa Jember Site can make students interested in learning about historical relics according to the context in the environment around students. The digital catalog of the megalithic relics of the Kamal Arjasa Jember site has the advantage of being a catalog in the form of an android application that can be accessed and downloaded by anyone via the Playstore, however, the digital catalog of the megalithic relics of the Kamal Arjasa Jember Site also has limitations, namely, this application can only be accessed for students who have smartphones, however researchers have taken precautions by making an html format that can be opened via a computer / laptop. The material presented in the catalog represents history or social studies subject matter, especially prehistoric material during the megalithic period.

4.2 Suggestion

This development product has undergone several revision processes in accordance with the development stages and its effectiveness is tested, but there are suggestions for further product development, namely this product should also be developed for other IPS materials.

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